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FROM THE BEQUEST OF
JAMES WALKER
(Class of 1814)
President of Harvard College

"Preference being given to works in the Intellectual and Moral Sciences"

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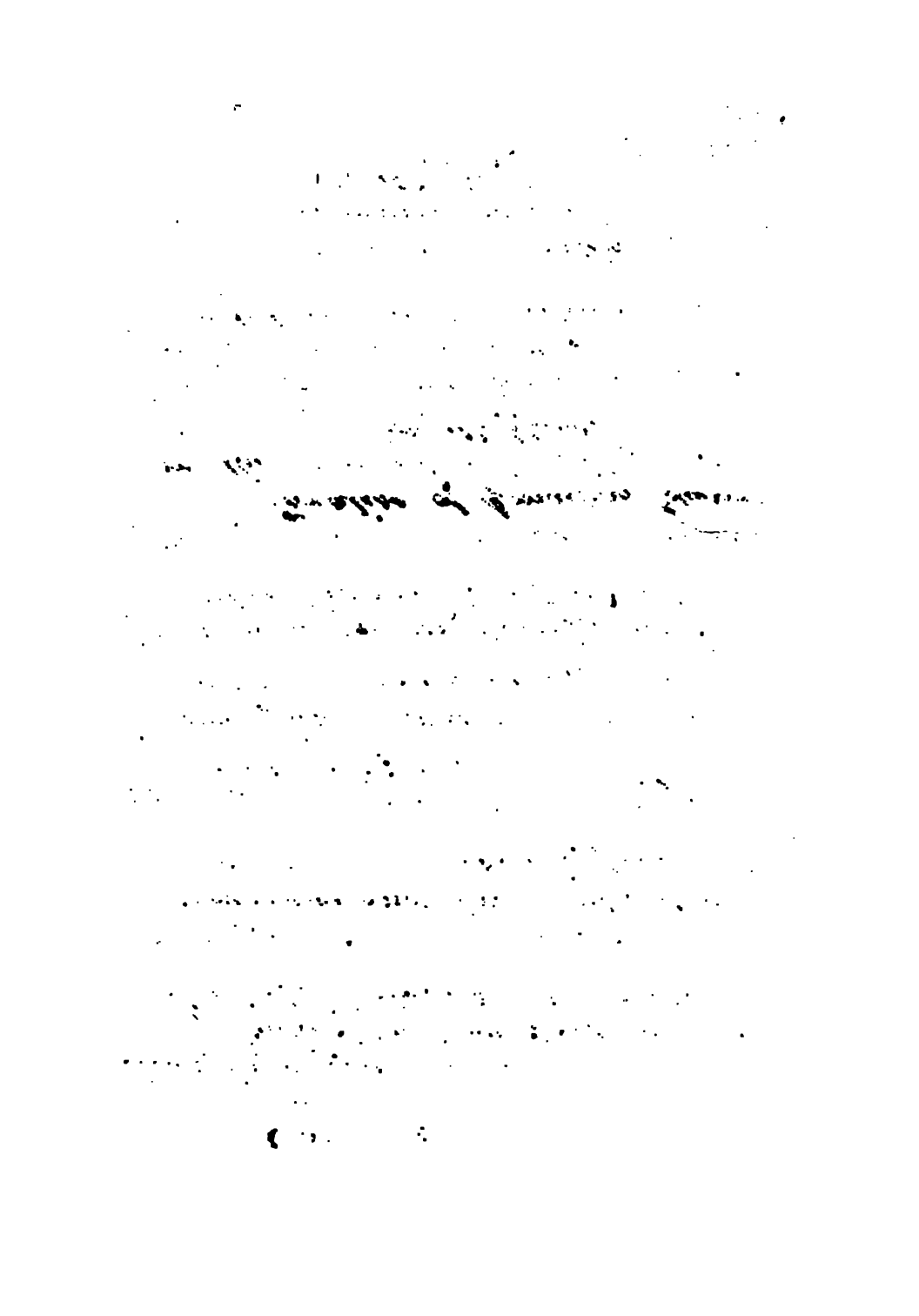

A DISCOURSE

ON

THE STUDY

OF THE

LAW OF NATURE AND NATIONS

BY THE

RIGHT HON. SIR JAMES MACKINTOSH.

EDINBURGH:
THOMAS CLARK, 38 GEORGE STREET.
MDCCCXXXVIII.

Phil 140.2

15 March 22.
Bequest of
James Walker, D.D., LL.D.
(H. U. 1814.)
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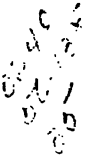

A BRIEF NOTICE

OF

THE AUTHOR.

Sir James Mackintosh was born on the 24th October 1765, at Aldourie, in the county of Inverness. He received the rudiments of his education at the school of Fortrose in Ross-shire, thence he removed to King's College, Aberdeen, and gave at both of these places an earnest of his future eminence. At the University above named he formed an acquaintance with the celebrated Robert Hall, which continued during life. Having been destined by his friends for the profession of a physician, he entered the University of Edinburgh at the age of twenty, where he took his degree of M. D. in September 1787.

In 1788 he went to London, and there married Miss Stuart about a year after. In 1789 he published a pamphlet on the Regency question, but as Mr. Pitt's theory on the subject triumphed over that of Fox, the pamphlet shared the fate of the cause which it espoused. His Vindiciæ Gallicæ, which appeared in 1791, passed through three editions in the short space of six months, and by the talents displayed in it procured for the author the acquaintance of Sheridan, Grey, Whitbread, Fox, and the Duke of Bedford. He renounced the medical profession, and in 1792 entered student of law in Lincoln's-Inn, and was called to the bar in 1795. Having resolved to give a course of lectures on the Law of Nature and Nations, he announced his intention by a prospectus in 1797, and, accordingly, delivered in 1798 in Lincoln's-Inn Hall his introductory lecture, which was published in 1799. The ability and sound principle displayed in it secured universal approbation; not only did Fox and his friends lavish their praises on the author,

but even Lords Rosslyn and Melville, Mr. Adington, Mr. Canning, and Mr. Pitt himself, wrote him letters of compliment. The latter statesman, then a bencher of Lincoln's-Inn, thus addressed him:—"I have no motive for wishing to flatter you; but I must be permitted to say, that I have never met with any thing so able and elegant on the subject in any language." Members of the Government were among his chief admirers and eulogists. No course of lectures was remembered to have found an audience so distinguished. About thirty peers, double the number of commoners, and a great crowd of the most learned and accomplished persons of the metropolis, were attracted to Lincoln's-Inn Hall. This is not to be wondered at, since the lecture is equally profound in thought, extensive in its range of information, and superior, perhaps, in method and order to any thing which he has produced.

The course, of which the present publication forms the Introductory Lecture, not only established the author's reputation, but opened up the way for him to fortune. Of the succeeding lectures it is said that only the notes or heads from which he delivered them remain.

"If," says his friend Mr. Thomas Campbell, "he had published nothing else than this Discourse on the Law of Nature and Nations, he would have left a perfect monument of his intellectual strength and symmetry; and even supposing that that essay had been recovered only imperfect and mutilated, if but a score of its consecutive sentences could have been shown, they would bear a testimony to his genius as decided as the bust of Theseus bears to Grecian art amidst the Elgin marbles."

His death, which happened on the 30th May 1832, excited deep and universal regret.

In literature, in politics, and in social life, he was one of the most distinguished ornaments of his country.

EDINBURGH, 38 GEORGE STREET.

A DISCOURSE

ON THE

LAW OF NATURE AND NATIONS.

BEFORE I begin a course of lectures on a science of great extent and importance, I think it my duty to lay before the public the reasons which have induced me to undertake such a labour, as well as a short account of the nature and objects of the course which I propose to deliver. I have always been unwilling to waste in unprofitable inactivity that leisure which the first years of my profession usually allow, and which diligent men, even with moderate talents, might often employ in a manner neither discreditable to themselves, nor wholly useless to others. Desirous that my own leisure should not be consumed in sloth, I anxiously looked about for some way of filling it up, which might enable me, according to the measure of my humble abilities, to contribute somewhat to the stock of general usefulness. I had long been convinced that public lectures, which have been used in most ages and countries to teach the elements of almost every part of learning, were the most convenient mode in which these elements could be taught; that they were the best adapted for the impor-

tant purposes of awakening the attention of the student, of abridging his labours, of guiding his inquiries, of relieving the tediousness of private study, and of impressing on his recollection the principles of science. I saw no reason why the Law of England should be less adapted to this mode of instruction, or less likely to benefit by it, than any other part of knowledge. A learned gentleman, however, had already occupied that ground,* and will, I doubt not, persevere in the useful labour which he has undertaken. On his province it was far from my wish to intrude. It appeared to me that a course of lectures on another science closely connected with all liberal professional studies, and which had long been the subject of my own reading and reflection, might not only prove a most useful introduction to the law of England, but might also become an interesting part of general study, and an important branch of the education of those who were not destined for the profession of the law. I was confirmed in my opinion by the assent and approbation of men, whose names, if it were becoming to mention them on so slight an occasion, would add authority to truth, and furnish some excuse even for error. Encouraged by their approbation, I resolved without delay to commence the undertaking, of which I shall now proceed to give some account; without interrupting the progress of my discourse by anticipating or answering the remarks of those who may, perhaps, sneer at me for a departure from the usual course of my profession; because I am desirous of employing in a rational and use-

* See "A Syllabus of Lectures on the Law of England, to be delivered in Lincoln's-Inn Hall by M. Nolan, Esq." London, 1796.

ful pursuit that leisure, of which the same men would have required no account, if it had been wasted on trifles, or even abused in dissipation.

The science which teaches the rights and duties of men and of states, has, in modern times, been called the Law of Nature and Nations. Under this comprehensive title are included the rules of morality, as they prescribe the conduct of private men towards each other in all the various relations of human life; as they regulate both the obedience of citizens to the laws, and the authority of the magistrate in framing laws and administering government; as they modify the intercourse of independent commonwealths in peace, and prescribe limits to their hostility in war. This important science comprehends only that part of *private ethics* which is capable of being reduced to fixed and general rules. It considers only those general principles of *jurisprudence* and *politics* which the wisdom of the lawgiver adapts to the peculiar situation of his own country, and which the skill of the statesman applies to the more fluctuating and infinitely varying circumstances which affect its immediate welfare and safety. "For there are in nature certain fountains of justice whence all civil laws are derived, but as streams; and like as waters do take tinctures and tastes from the soils through which they run, so do civil laws vary according to the regions and governments where they are planted, though they proceed from the same fountains."*—*Bacon's Dig. and Adv. of Learn.* Works, vol. i. p. 101.

* I have not been deterred by some petty incongruity of metaphor from quoting this noble sentence. Mr. Hume had, perhaps,

On the great questions of morality, of politics, and of municipal law, it is the object of this science to deliver only those fundamental truths of which the particular application is as extensive as the whole private and public conduct of men; to discover those "fountains of justice," without pursuing the "streams" through the endless variety of their course. But another part of the subject is treated with greater fulness and minuteness of application; namely, that important branch of it which professes to regulate the relations and intercourse of states, and more especially, both on account of their greater perfection and their more immediate reference to use, the regulations of that intercourse as they are modified by the usages of the civilized nations of Christendom. Here this science no longer rests in general principles. That province of it which we now call the law of nations, has, in many of its parts, acquired among our European nations much of the precision and certainty of positive law, and the particulars of that law are chiefly to be found in the works of those writers who have treated the science of which I now speak. It is because they have classed (in a manner which seems peculiar to modern times) the duties of individuals with those of nations, and established their obligation on similar grounds, that the whole science has been called, "The Law of Nature and Nations."

Whether this appellation be the happiest that could have been chosen for the science, and by what steps it

this sentence in his recollection, when he wrote a remarkable passage of his works. See Hume's Essays, vol. ii. p. 352, ed. Lond. 1788.

came to be adopted among our modern moralists and lawyers,* are inquiries, perhaps, of more curiosity than use, and which, if they deserve any where to be deeply pursued, will be pursued with more propriety in a full examination of the subject than within the short limits of an introductory discourse. Names are, however, in a great measure arbitrary; but the distribution of knowledge into its parts, though it may often perhaps be varied with little disadvantage, yet certainly depends upon some fixed principles. The modern method of considering individual and national morality as the subjects of the same science, seems to me as convenient and reasonable an arrangement as can be adopted. The same rules of morality which hold together men in families, and which form families into commonwealths, also link to-

* The learned reader is aware that the "jus naturæ" and "jus gentium" of the Roman lawyers are phrases of very different import from the modern phrases, "law of nature" and "law of nations." "Jus naturale," says Ulpian, "est quod natura omnia animalia docuit." D. 1. 1. 1. 3. "Quod naturalis ratio inter omnes homines constituit, id apud omnes perœque custoditur; vocaturque jus gentium." D. 1. 1. 9. But they sometimes neglect this subtle distinction—"Jure naturali quod appellatur jus gentium." I. 2. 1. 11. *Jus feciale* was the Roman term for our law of nations. "Belli quidem æquitas sanctissimè populi Rom. feciali jure perscripta est." Off. 1. 11. Our learned civilian Zouch has accordingly entitled his work, "De Jure Feciali, sive de Jure *inter* Gentes." The Chancellor D'Aguesseau, probably without knowing the work of Zouch, suggested that this law should be called, "*Droit entre les Gens*" (Œuvres, tom. ii. p. 337), in which he has been followed by a late ingenious writer, Mr. Bentham, Princ. of Morals and Pol. p. 324. Perhaps these learned writers do employ a phrase which expresses the subject of this law with more accuracy than our common language; but I doubt whether innovations in the terms of science always repay us by their superior precision for the uncertainty and confusion which the change occasions.

gether these commonwealths as members of the great society of mankind. Commonwealths, as well as private men, are liable to injury, and capable of benefit, from each other; it is, therefore, their interest, as well as their duty, to reverence, to practise, and to enforce those rules of justice which control and restrain injury, which regulate and augment benefit, which, even in their present imperfect observance, preserve civilized states in a tolerable condition of security from wrong, and which, if they could be generally obeyed, would establish, and permanently maintain, the well-being of the universal commonwealth of the human race. It is therefore with justice, that one part of this science has been called "*the natural law of individuals*," and the other "*the natural law of states*;" and it is too obvious to require observation,* that the application of both these laws, of the former as much as of the latter, is modified and varied by customs, conventions, character, and situation. With a view to these principles, the writers on general jurisprudence have considered states as moral persons; a mode of expression which has been called a fiction of law, but which may be regarded with more propriety as a bold metaphor, used to convey the important truth, that nations, though they acknowledge no common superior, and neither can nor ought to be subjected to human punishment, are yet under the same obligations mutually to practise honesty and humanity, which would have bound individuals, even if they could be conceived ever to have subsisted without the pro-

* This remark is suggested by an objection of *Vattel*, which is *more* specious than solid. See his Prelim. § 6.

tecting restraints of government; if they were not compelled to the discharge of their duty by the just authority of magistrates, and by the wholesome terrors of the laws. With the same views this law has been styled, and (notwithstanding the objections of some writers to the vagueness of the language) appears to have been styled with great propriety, "the law of nature." It may with sufficient correctness, or at least by an easy metaphor, be called a "*law*," inasmuch as it is a supreme, invariable, and uncontrollable rule of conduct to all men, of which the violation is avenged by natural punishments, which necessarily flow from the constitution of things, and are as fixed and inevitable as the order of nature. It is "*the law of nature*," because its general precepts are essentially adapted to promote the happiness of man, as long as he remains a being of the same nature with which he is at present endowed, or, in other words, as long as he continues to be man, in all the variety of times, places, and circumstances, in which he has been known, or can be imagined to exist; because it is discoverable by natural reason, and suitable to our natural constitution; because its fitness and wisdom are founded on the general nature of human beings, and not on any of those temporary and accidental situations in which they may be placed. It is with still more propriety, and indeed with the highest strictness, and the most perfect accuracy, considered as a law, when, according to those just and magnificent views which philosophy and religion open to us of the government of the world, it is received and reverenced as the sacred code, promulgated by the great Legislator of the Universe for

the guidance of his creatures to happiness, guarded and enforced, as our own experience may inform us, by the penal sanctions of shame, of remorse, of infamy, and of misery; and still farther, enforced by the reasonable expectation of yet more awful penalties in a future and more permanent state of existence. It is the contemplation of the law of nature under this full, mature, and perfect idea of its high origin and transcendent dignity, that called forth the enthusiasm of the greatest men, and the greatest writers of ancient and modern times, in those sublime descriptions, where they have exhausted all the powers of language, and surpassed all the other exertions, even of their own eloquence, in the display of the beauty and majesty of this sovereign and immutable law. It is of this law that Cicero has spoken in so many parts of his writings, not only with all the splendour and copiousness of eloquence, but with the sensibility of a man of virtue; and with the gravity and comprehension of a philosopher.* It is of this law that Hooker speaks

* "Est quidem vera lex, recta ratio, *naturæ congruens*, diffusa in omnes, constans, sempiterna, quæ vocet ad officium jubendo, vetando à fraude deterreat, quæ tamen neque probos frustra jubet aut vetat, neque improbos jubendo aut vetando movet. Huic legi neque obrogari fas est, neque derogari ex hac aliquid licet, neque tota abrogari potest. Nec verò aut per senatum aut per populum solvi hac lege possumus. Neque est quærendus explanator aut interpres ejus alius. Nec erit alia lex Romæ, alia Athenis, alia nunc, alia posthac, sed et omnes gentes et omni tempore una lex et sempiterna, et immutabilis continebit, unusque erit communis quasi magister et imperator omnium Deus. Ille legis hujus inventor, disceptator, lator, cui qui non parebit *ipse se fugiet et naturam hominis aspernatur*, atque hoc ipso luet maximas pœnas etiamsi cætera supplicia quæ putantur effugerit."—*Fragm.* lib. iii. *Cicer. de. Republ. apud Lactant.*

It is impossible to read such precious fragments without deploring

in so sublime a strain:—"Of law, no less can be said, than that her seat is the bosom of God, her voice the harmony of the world; all things in heaven and earth do her homage, the very least as feeling her care, the greatest as not exempted from her power: both angels and men, and creatures of what condition soever, though each in different sort and manner, yet all with uniform consent admiring her as the mother of their peace and joy."—*Eccles. Pol.* book i. in the conclusion.

Let not those who, to use the language of the same Hooker, "talk of truth," without "ever sounding the depth from whence it springeth," hastily take it for granted, that these great masters of eloquence and reason were led astray by the specious delusions of mysticism, from the sober consideration of the true grounds of morality in the nature, necessities, and interests of man. They studied and taught the principles of morals; but they thought it still more necessary, and more wise, a much nobler task, and more becoming a true philosopher, to inspire men with a love and reverence for virtue.* They were not contented with elementary spe-

the loss of a work which, for the benefit of all generations, *should* have been immortal.

[It is scarcely necessary to remind the reader, that the cause of this regret has been, if not entirely removed, at least greatly diminished, in the discovery of Dr. Maius of a MS. of this precious work in the Vatican. Several editions have been edited by different Continental scholars.]

* "Age verò urbibus constitutis ut fidem colere et justitiam retinere discerent et aliis parere suâ voluntate consuescerent, ac non modò labores excipiendos communis commodi causâ sed etiam vitam amittendam existimarent; qui tandem fieri potuit nisi homines ea quæ ratione invenissent, eloquentiâ persuadere potuissent?"—*Cic. de Inv. Rhet.* lib. i. in proëm.

culations. They examined the foundations of our duty, but they felt and cherished a most natural, a most seemly, a most rational enthusiasm, when they contemplated the majestic edifice which is reared on these solid foundations. They devoted the highest exertions of their mind to spread that beneficent enthusiasm among men. They consecrated as a homage to virtue the most perfect fruits of their genius. If these grand sentiments of "the good and fair" have sometimes prevented them from delivering the principles of ethics with the nakedness and dryness of science, at least we must own that they have chosen the better part; that they have preferred virtuous feeling to moral theory; and practical benefit to speculative exactness. Perhaps these wise men may have supposed that the minute dissection and anatomy of Virtue might, to the ill-judging eye, weaken the charm of her beauty.

It is not for me to attempt a theme which has perhaps been exhausted by these great writers. I am indeed much less called upon to display the worth and usefulness of the law of nations, than to vindicate myself from presumption in attempting a subject which has been already handled by so many masters. For the purpose of that vindication it will be necessary to sketch a very short and slight account (for such in this place it must unavoidably be) of the progress and present state of the science, and of that succession of able writers who have gradually brought it to its present perfection.

We have no Greek or Roman treatise remaining on the law of nations. From the title of one of the lost works of Aristotle, it appears that he composed a trea-

tise on the laws of war,* which, if we had the good fortune to possess it, would doubtless have amply satisfied our curiosity, and would have taught us both the practice of the ancient nations and the opinions of their moralists, with that depth and precision which distinguish the other works of that great philosopher. We can now only imperfectly collect that practice and those opinions from various passages which are scattered over the writings of philosophers, historians, poets, and orators. When the time shall arrive for a more full consideration of the state of the government and manners of the ancient world, I shall be able, perhaps, to offer satisfactory reasons why these enlightened nations did not separate from the general province of ethics that part of morality which regulates the intercourse of states, and erect it into an independent science. It would require a long discussion to unfold the various causes which united the modern nations of Europe into a closer society; which linked them together by the firmest bands of mutual dependence, and which thus, in process of time, gave to the law that regulated their intercourse greater importance, higher improvement, and more binding force. Among these causes we may enumerate a common extraction, a common religion, similar manners, institutions, and languages; in earlier ages the authority of the See of Rome, and the extravagant claims of the imperial crown; in later times the connexions of trade, the jealousy of power, the refinement of civilization, the cultivation of science, and, above all, that general mildness of character and manners which arose from the combined

* Δικαιώματα τῶν πολέμων.

and progressive influence of chivalry, of commerce, of learning, and of religion. Nor must we omit the similarity of those political institutions which, in every country that had been over-run by the Gothic conquerors, bore discernible marks (which the revolutions of succeeding ages had obscured, but not obliterated) of the rude but bold and noble outline of liberty that was originally sketched by the hand of these generous barbarians. These and many other causes conspired to unite the nations of Europe in a more intimate connexion and a more constant intercourse, and of consequence made the regulation of their intercourse more necessary, and the law that was to govern it more important. In proportion as they approached to the condition of provinces of the same empire, it became almost as essential that Europe should have a precise and comprehensive code of the law of nations, as that each country should have a system of municipal law. The labours of the learned accordingly began to be directed to this subject in the sixteenth century, soon after the revival of learning, and after that regular distribution of power and territory which has subsisted, with little variation, until our times. The critical examination of these early writers would perhaps not be very interesting in an extensive work, and it would be unpardonable in a short discourse. It is sufficient to observe that they were all more or less shackled by the barbarous philosophy of the schools, and that they were impeded in their progress by a timorous deference for the inferior and technical parts of the Roman law, without raising their views to the comprehensive principles which will for

ever inspire mankind with veneration for that grand monument of human wisdom. It was only indeed in the sixteenth century that the Roman law was first studied and understood as a science connected with Roman history and literature, and illustrated by men whom Ulpian and Papinian would not have disdained to acknowledge as their successors.* Among the writers of that age we may perceive the ineffectual attempts, the partial advances, the occasional streaks of light which always precede great discoveries, and works that are to instruct posterity.

The reduction of the law of nations to a system was reserved for Grotius. It was by the advice of Lord Bacon and Peiresc that he undertook this arduous task. He produced a work which we now indeed justly deem imperfect, but which is perhaps the most complete that the world has yet owed, at so early a stage in the progress of any science, to the genius and learning of one man. So great is the uncertainty of posthumous reputation, and so liable is the fame even of the greatest men to be obscured by those new fashions of thinking and writing which succeed each other so rapidly among polished nations, that Grotius, who filled so large a space in the eye of his contemporaries, is now perhaps known to some of my readers only by name. Yet if we fairly estimate both his endowments and his virtues, we may justly consider him as one of the most memorable men

* Cujacius, Brissonius, Hottomannus, &c., &c.—Vide *Gravina Orig. Jur. Civil.* pp. 132-38. edit. Lips. 1737.

Leibnitz, a great mathematician as well as philosopher, declares that he knows nothing which approaches so near to the method and precision of geometry as the Roman law.—*Op.* tom. iv. p. 254.

who have done honour to modern times. He combined the discharge of the most important duties of active and public life with the attainment of that exact and various learning which is generally the portion only of the recluse student. He was distinguished as an advocate and a magistrate, and he composed the most valuable works on the law of his own country; he was almost equally celebrated as a historian, a scholar, a poet, and a divine; a disinterested statesman, a philosophical lawyer, a patriot who united moderation with firmness, and a theologian who was taught candour by his learning. Unmerited exile did not damp his patriotism; the bitterness of controversy did not extinguish his charity. The sagacity of his numerous and fierce adversaries could not discover a blot on his character; and in the midst of all the hard trials and galling provocations of a turbulent political life, he never once deserted his friends when they were unfortunate, nor insulted his enemies when they were weak. In times of the most furious civil and religious faction he preserved his name unspotted, and he knew how to reconcile fidelity to his own party, with moderation towards his opponents. Such was the man who was destined to give a new form to the law of nations, or rather to create a science, of which only rude sketches and indigested materials were scattered over the writings of those who had gone before him. By tracing the laws of his country to their principles, he was led to the contemplation of the law of nature, which he justly considered as the parent of all municipal law.* Few works were more

* Proavia juris civilis.—*De Jur. Bell. ac Pac. Proleg.* § 16.

celebrated than that of Grotius in his own days, and in the age which succeeded. It has, however, been the fashion of the last half-century to depreciate his work as a shapeless compilation, in which reason lies buried under a mass of authorities and quotations. This fashion originated among French wits and declaimers, and it has been, I know not for what reason, adopted, though with far greater moderation and decency, by some respectable writers among ourselves. As to those who first used this language, the most candid supposition that we can make with respect to them is, that they never read the work; for, if they had not been deterred from the perusal of it by such a formidable display of Greek characters, they must soon have discovered that Grotius never quotes on any subject till he has first appealed to some principles, and often, in my humble opinion, though not always, to the soundest and most rational principles.

But another sort of answer is due to some of those* who have criticised Grotius, and that answer might be given in the words of Grotius himself.† He was not of such a stupid and servile cast of mind, as to quote the opinions of poets or orators, of historians and philosophers, as those of judges, from whose decision there was no appeal. He quotes them, as he tells us himself, as witnesses whose conspiring testimony, mightily strengthened and confirmed by their discordance on almost every other subject, is a conclusive proof of the unanimity of the whole human race on the great rules of duty and the

* Dr. Paley, Princ. of Mor. and Polit. Philos. Pref. pp. xiv. xv.
† Grot. Jur. Bell. et Pac. Proleg. § 40.

fundamental principles of morals. On such matters, poets and orators are the most unexceptionable of all witnesses; for they address themselves to the general feelings and sympathies of mankind; they are neither warped by system, nor perverted by sophistry; they can attain none of their objects, they can neither please nor persuade, if they dwell on moral sentiments not in unison with those of their readers. No system of moral philosophy can surely disregard the general feelings of human nature and the according judgment of all ages and nations. But where are these feelings and that judgment recorded and preserved? In those very writings which Grotius is gravely blamed for having quoted. The usages and laws of nations, the events of history, the opinions of philosophers, the sentiments of orators and poets, as well as the observation of common life, are, in truth, the materials out of which the science of morality isformed; and those who neglect them are justly chargeable with a vain attempt to philosophise without regard to fact and experience, the sole foundation of all true philosophy.

If this were merely an objection of taste, I should be willing to allow that Grotius has indeed poured forth his learning with a profusion that sometimes rather encumbers than adorns his work, and which is not always necessary to the illustration of his subject. Yet, even in making that concession, I should rather yield to the taste of others than speak from my own feelings. I own that such richness and splendour of literature have a powerful charm for me. They fill my mind with an endless variety of delightful recollections and associations.

They relieve the understanding in its progress through a vast science, by calling up the memory of great men and of interesting events. By this means we see the truths of morality clothed with all the eloquence (not that could be produced by the powers of one man, but) that could be bestowed on them by the collective genius of the world. Even Virtue and Wisdom themselves acquire new majesty in my eyes, when I thus see all the great masters of thinking and writing called together, as it were, from all times and countries, to do them homage, and to appear in their train.

But this is no place for discussions of taste, and I am very ready to own that mine may be corrupted. The work of Grotius is liable to a more serious objection, though I do not recollect that it has ever been made. His method is inconvenient and unscientific. He has inverted the natural order. That natural order undoubtedly dictates, that we should first search for the original principles of the science in human nature; then apply them to the regulation of the conduct of individuals; and lastly, employ them for the decision of those difficult and complicated questions that arise with respect to the intercourse of nations. But Grotius has chosen the reverse of this method. He begins with the consideration of the states of peace and war, and he examines original principles only occasionally and incidentally as they grow out of the questions which he is called upon to decide. It is a necessary consequence of this disorderly method, which exhibits the elements of the science in the form of scattered digressions, that he seldom employs sufficient discussion on these fundamental truths,

and never in the place where such a discussion would be most instructive to the reader.

This defect in the plan of Grotius was perceived, and supplied, by Puffendorff, who restored natural law to that superiority which belonged to it, and with great propriety treated the law of nations as only one main branch of the parent stock. Without the genius of his master, and with very inferior learning, he has yet treated this subject with sound sense, with clear method, with extensive and accurate knowledge, and with a copiousness of detail sometimes indeed tedious, but always instructive and satisfactory. His work will be always studied by those who spare no labour to acquire a deep knowledge of the subject; but it will, in our times, I fear, be oftener found on the shelf than on the desk of the general student. In the time of Mr. Locke it was considered as the manual of those who were intended for active life; but in the present age, I believe it will be found that men of business are too much occupied, men of letters are too fastidious, and men of the world too indolent, for the study or even the perusal of such works. Far be it from me to derogate from the real and great merit of so useful a writer as Puffendorff. His treatise is a mine in which all his successors must dig. I only presume to suggest, that a book so prolix, and so utterly void of all the attractions of composition, is likely to repel many readers who are interested, and who might perhaps be disposed to acquire some knowledge of the principles of public law.

Many other circumstances might be mentioned, which conspire to prove that neither of the great works of

which I have spoken, has superseded the necessity of a new attempt to lay before the public a System of the Law of Nations. The language of science is so completely changed since both these works were written, that whoever was now to employ their terms in his moral reasonings would be almost unintelligible to some of his hearers or readers; and to some among them too who are neither ill qualified nor ill disposed to study such subjects with considerable advantage to themselves. The learned indeed well know how little novelty or variety is to be found in scientific disputes. The same truths and the same errors have been repeated from age to age, with little variation but in the language; and novelty of expression is often mistaken by the ignorant for substantial discovery. Perhaps too very nearly the same portion of genius and judgment has been exerted in most of the various forms under which science has been cultivated at different periods of history. The superiority of those writers who continue to be read, perhaps often consists chiefly in taste, in prudence, in a happy choice of subject, in a favourable moment, in an agreeable style, in the good fortune of a prevalent language, or in other advantages which are either accidental, or are the result rather of the secondary than of the highest faculties of the mind.—But these reflections, while they moderate the pride of invention, and dispel the extravagant conceit of superior illumination, yet serve to prove the use, and indeed the necessity, of composing, from time to time, new systems of science adapted to the opinions and language of each succeeding period. Every age must be taught in its own language. If a

man were now to begin a discourse on ethics with an account of the "*moral entities*" of Puffendorff,* he would speak an unknown tongue.

It is not, however, alone as a mere translation of former writers into modern language that a new system of public law seems likely to be useful. The age in which we live possesses many advantages which are peculiarly favourable to such an undertaking. Since the composition of the great works of Grotius and Puffendorff, a more modest, simple, and intelligible philosophy has been introduced into the schools; which has indeed been grossly abused by sophists, but which, from the time of Locke, has been cultivated and improved by a succession of disciples worthy of their illustrious master. We are thus enabled to discuss with precision, and to explain with clearness, the principles of the science of human nature, which are in themselves on a level with the capacity of every man of good sense, and which only appeared to be abstruse from the unprofitable subtleties with which they were loaded, and the barbarous jargon in which they were expressed. The deepest doctrines of morality have since that time been treated in the perspicuous and popular style, and with some degree of the beauty and eloquence of the ancient moralists. That philosophy on which are founded the principles of our duty, if it has not become more certain (for morality

* I do not mean to impeach the soundness of any part of Puffendorff's reasoning founded on moral entities. It may be explained in a manner consistent with the most just philosophy. He used, as every writer must do, the scientific language of his own time. I only assert that, to those who are unacquainted with ancient systems, his philosophical vocabulary is obsolete and unintelligible.

and political philosophers, may reap the most important instruction. They may plainly discover in all the useful and beautiful variety of governments and institutions, and under all the fantastic multitude of usages and rites which have prevailed among men, the same fundamental, comprehensive truths, the sacred master-principles which are the guardians of human society, recognised and revered (with few and slight exceptions) by every nation upon earth, and uniformly taught (with still fewer exceptions) by a succession of wise men from the first dawn of speculation to the present moment. The exceptions, few as they are, will, on more reflection, be found rather apparent than real. If we could raise ourselves to that height from which we ought to survey so vast a subject, these exceptions would altogether vanish; the brutality of a handful of savages would disappear in the immense prospect of human nature, and the murmurs of a few licentious sophists would not ascend to break the general harmony. This consent of mankind in first principles, and this endless variety in their application, which is one among many valuable truths which we may collect from our present extensive acquaintance with the history of man, is itself of vast importance. Much of the majesty and authority of virtue is derived from their consent, and almost the whole of practical wisdom is founded on their variety.

What former age could have supplied facts for such a work as that of Montesquieu? He indeed has been, perhaps justly, charged with abusing this advantage, by the undistinguishing adoption of the narratives of travellers of very different degrees of accuracy and veracity.

But if we reluctantly confess the justness of this objection; if we are compelled to own that he exaggerates the influence of climate, that he ascribes too much to the foresight and forming skill of legislators, and far too little to time and circumstances, in the growth of political constitutions; that the substantial character and essential differences of governments are often lost and confounded in his technical language and arrangement; that he often bends the free and irregular outline of nature to the imposing but fallacious geometrical regularity of system; that he has chosen a style of affected abruptness, sententiousness, and vivacity, ill suited to the gravity of his subject: after all these concessions (for his fame is large enough to spare many concessions), the Spirit of Laws will still remain not only one of the most solid and durable monuments of the powers of the human mind, but a striking evidence of the inestimable advantages which political philosophy may receive from a wide survey of all the various conditions of human society.

In the present century a slow and silent, but very substantial, mitigation has taken place in the practice of war; and in proportion as that mitigated practice has received the sanction of time, it is raised from the rank of mere usage, and becomes part of the law of nations. Whoever will compare our present modes of warfare with the system of Grotius* will clearly discern the immense improvements which have taken place in that respect since the publication of his work, during a period, perhaps in every point of view, the happiest to be found in the history of the

* Especially those chapters of the third book, entitled, *Temperamentum circa Captivos*, &c. &c.

world. In the same period many important points of public law have been the subject of contest both by argument and by arms, of which we find either no mention, or very obscure traces, in the history of preceding times.

There are other circumstances to which I allude with hesitation and reluctance, though it must be owned that they afford to a writer of this age some degree of unfortunate and deplorable advantage over his predecessors. Recent events have accumulated more terrible practical instruction on every subject of politics than could have been in other times acquired by the experience of ages. Men's wit sharpened by their passions has penetrated to the bottom of almost all political questions. Even the fundamental rules of morality themselves have, for the first time, unfortunately for mankind, become the subject of doubt and discussion. I shall consider it as my duty to abstain from all mention of these awful events, and of these fatal controversies. But the mind of that man must indeed be incurious and indocile, who has either overlooked all these things, or reaped no instruction from the contemplation of them.

From these reflections it appears, that, since the composition of those two great works on the Law of Nature and Nations which continue to be the classical and standard works on that subject, we have gained both more convenient instruments of reasoning and more extensive materials for science; that the code of war has been enlarged and improved; that new questions have been practically decided; and that new controversies have arisen regarding the intercourse of independent states, and the first principles of morality and civil government.

Some readers may, however, think that in these observations which I offer, to excuse the presumption of my own attempt, I have omitted the mention of later writers, to whom some part of the remarks is not justly applicable. But, perhaps, further consideration will acquit me in the judgment of such readers. Writers on particular questions of public law are not within the scope of my observations. They have furnished the most valuable materials; but I speak only of a system. To the large work of Wolffius, the observations which I have made on Puffendorff as a book for general use, will surely apply with tenfold force. His abridger, Vattel, deserves, indeed, considerable praise. He is a very ingenious, clear, elegant, and useful writer. But he only considers one part of this extensive subject, namely the law of nations, strictly so called; and I cannot help thinking, that, even in this department of the science, he has adopted some doubtful and dangerous principles, not to mention his constant deficiency in that fulness of example and illustration, which so much embellishes and strengthens reason. It is hardly necessary to take any notice of the text-book of Heineccius, the best writer of elementary books with whom I am acquainted on any subject. Burlamaqui is an author of superior merit; but he confines himself too much to the general principles of morality and politics, to require much observation from me in this place. The same reason will excuse me for passing over in silence the works of many philosophers and moralists, to whom, in the course of my proposed lectures, I shall owe and confess the greatest obligations; and it might perhaps deliver

me from the necessity of speaking of the work of Dr. Paley, if I were not desirous of this public opportunity of professing my gratitude for the instruction and pleasure which I have received from that excellent writer, who possesses, in so eminent a degree, those invaluable qualities of a moralist, good sense, caution, sobriety, and perpetual reference to convenience and practice; and who certainly is thought less original than he really is, merely because his taste and modesty have led him to disdain the ostentation of novelty, and because he generally employs more art to blend his own arguments with the body of received opinions, so as that they are scarce to be distinguished, than other men, in the pursuit of a transient popularity, have exerted to disguise the most miserable common-places in the shape of paradox.

No writer since the time of Grotius, of Puffendorff, and of Wolf, has combined an investigation of the principles of natural and public law, with a full application of these principles to particular cases; and in these circumstances, I trust, it will not be deemed extravagant presumption in me to hope that I shall be able to exhibit a view of this science, which shall, at least, be more intelligible and attractive to students, than the learned treatises of these celebrated men. I shall now proceed to state the general plan and subjects of the lectures in which I am to make this attempt.

I. The being whose actions the law of nature professes to regulate, is man. It is on the knowledge of his nature that the science of his duty must be founded.*

* Natura enim juris explicanda est nobis, *eaque ab hominis repetenda naturâ.*—*Cic. de Leg.* lib. i. c. 5.

It is impossible to approach the threshold of moral philosophy without a previous examination of the faculties and habits of the human mind. Let no reader be repelled from this examination by the odious and terrible name of *metaphysics;* for it is, in truth, nothing more than the employment of good sense, in observing our own thoughts, feelings, and actions; and when the facts which are thus observed are expressed as they ought to be, in plain language, it is, perhaps, above all other sciences, most on a level with the capacity and information of the generality of thinking men. When it is thus expressed, it requires no previous qualification, but a sound judgment, perfectly to comprehend it; and those who wrap it up in a technical and mysterious jargon, always give us strong reason to suspect that they are not philosophers but impostors. Whoever thoroughly understands such a science, must be able to teach it plainly to all men of common sense. The proposed course will therefore open with a very short, and, I hope, a very simple and intelligible account of the powers and operations of the human mind. By this plain statement of facts, it will not be difficult to decide many celebrated, though frivolous, and merely verbal controversies, which have long amused the leisure of the schools, and which owe both their fame and their existence to the ambiguous obscurity of scholastic language. It will, for example, only require an appeal to every man's experience, to prove that we often act purely from a regard to the happiness of others, and are therefore social beings; and it is not necessary to be a consummate judge of the deceptions of language, to despise the sophistical trifler,

who tells us, that, because we experience a gratification in our benevolent actions, we are therefore exclusively and uniformly selfish. A correct examination of facts will lead us to discover that quality which is common to all virtuous actions, and which distinguishes them from those which are vicious and criminal. But we shall see that it is necessary for man to be governed not by his own transient and hasty opinion upon the tendency of every particular action, but by those fixed and unalterable rules, which are the joint result of the impartial judgment, the natural feelings, and the embodied experience of mankind. The authority of these rules is, indeed, founded only on their tendency to promote private and public welfare; but the morality of actions will appear solely to consist in their correspondence with the rule. By the help of this obvious distinction we shall vindicate a just theory, which, far from being modern, is, in fact, as ancient as philosophy, both from plausible objections, and from the odious imputation of supporting those absurd and monstrous systems which have been built upon it. Beneficial tendency is the foundation of rules, and the criterion by which habits and sentiments are to be tried. But it is neither the immediate standard, nor can it ever be the principal motive, of action. An action, to be completely virtuous, must accord with moral rules, and must flow from our natural feelings and affections, moderated, matured, and improved into steady habits of right conduct.* Without, however, dwelling longer on subjects which cannot be clearly stated, unless they are

* Est autem virtus nihil aliud, quam in se perfecta atque ad summum perducta natura.—*Cic. de Leg.* lib. i. c. 8.

fully unfolded, I content myself with observing, that it shall be my object, in this preliminary, but most important, part of the course, to lay the foundations of morality so deeply in human nature, as may satisfy the coldest inquirer; and, at the same time, to vindicate the paramount authority of the rules of our duty, at all times, and in all places, over all opinions of interest and speculations of benefit, so extensively, so universally, and so inviolably, as may well justify the grandest and the most apparently extravagant effusions of moral enthusiasm. If, notwithstanding all my endeavours to deliver these doctrines with the utmost simplicity, any of my auditors should still reproach me for introducing such abstruse matters, I must shelter myself behind the authority of the wisest of men. "If they (the ancient moralists,) before they had come to the popular and received notions of virtue and vice, had staid a little longer upon the inquiry concerning *the roots of good and evil*, they had given, in my opinion, a great light to that which followed; and especially if they had consulted with nature, they had made their doctrines less prolix, and more profound."—*Bacon. Dign. and Adv. of Learn.* book ii. What Lord Bacon desired for the mere gratification of scientific curiosity, the welfare of mankind now imperiously demands. Shallow systems of metaphysics have given birth to a brood of abominable and pestilential paradoxes, which nothing but a more profound philosophy can destroy. However we may, perhaps, lament the necessity of discussions which may shake the habitual reverence of some men for those rules which it is the chief interest of all men to practise, we have now no

choice left. We must either dispute, or abandon the ground. Undistinguishing and unmerited invectives against philosophy will only harden sophists and their disciples in the insolent conceit, that they are in possession of an undisputed superiority of reason; and that their antagonists have no arms to employ against them, but those of popular declamation. Let us not for a moment even appear to suppose, that philosophical truth and human happiness are so irreconcilably at variance. I cannot express my opinion on this subject so well as in the words of a most valuable, though generally neglected writer: "The science of abstruse learning, when completely attained, is like Achilles's spear, that healed the wounds it had made before; so this knowledge serves to repair the damage itself had occasioned, and this perhaps is all it is good for; it casts no additional light upon the paths of life, but disperses the clouds with which it had overspread them before; it advances not the traveller one step in his journey, but conducts him back again to the spot from whence he wandered. Thus the land of Philosophy consists partly of an open champaign country, passable by every common understanding, and partly of a range of woods, traversable only by the speculative, and where they too frequently delight to amuse themselves. Since then we shall be obliged to make incursions into this latter track, and shall probably find it a region of obscurity, danger, and difficulty, it behoves us to use our utmost endeavours for enlightening and smoothing the way before us."* We shall, however, re-

* Search's Light of Nature, by Abraham Tucker, Esq. vol. i. pref. p. xxxiii.

main in the forest only long enough to visit the fountains of those streams which flow from it, and which water and fertilise the cultivated region of Morals, to become acquainted with the modes of warfare practised by its savage inhabitants, and to learn the means of guarding our fair and fruitful land against their desolating incursions. I shall hasten from speculations, to which I am naturally, perhaps, but too prone, and proceed to the more profitable consideration of our practical duty.

II. The first and most simple part of ethics is that which regards the duties of private men towards each other, when they are considered apart from the sanction of positive laws. I say *apart* from that sanction, not *antecedent* to it; for though we *separate* private from political duties for the sake of greater clearness and order in reasoning, yet we are not to be so deluded by this mere arrangement of convenience as to suppose that human society ever has subsisted, or ever could subsist, without being protected by government and bound together by laws. All these relative duties of private life have been so copiously and beautifully treated by the moralists of antiquity, that few men will now choose to follow them who are not actuated by the wild ambition of equalling Aristotle in precision, or rivalling Cicero in eloquence. They have been also admirably treated by modern moralists, among whom it would be gross injustice not to number many of the preachers of the Christian religion, whose peculiar character is that spirit of universal charity, which is the living principle of all our social duties. For it was long ago said, with great truth, *by Lord* Bacon, "that there never was any philosophy,

religion, or other discipline, which did so plainly and highly exalt that good which is communicative, and depress the good which is private and particular, as the Christian faith."* The appropriate praise of this religion is not so much, that it has taught new duties, as that it breathes a milder and more benevolent spirit over the whole extent of morals.

On a subject which has been so exhausted, I should naturally have contented myself with the most slight and general survey, if some fundamental principles had not of late been brought into question, which, in all former times, have been deemed too evident to require the support of argument, and almost too sacred to admit the liberty of discussion. I shall here endeavour to strengthen some parts of the fortifications of morality which have hitherto been neglected, because no man had ever been hardy enough to attack them. Almost all the relative duties of human life will be found more immediately, or more remotely, to arise out of the two great institutions of property and marriage. They constitute, preserve, and improve society. Upon their gradual improvement depends the progressive civilization of mankind; on them rests the whole order of civil life. We are told by Horace, that the first efforts of lawgivers to civilise men consisted in strengthening and regulating these institutions, and fencing them round with rigorous penal laws.

> Oppida cœperunt munire et ponere leges
> Ne quis fur esset, neu latro, neu quis adulter.
>
> 1 *Serm.* iii. 105.

* Bacon, Dign. and Adv. of Learn. book ii.

A celebrated ancient orator, of whose poems we have but a few fragments remaining, has well described the progressive order in which human society is gradually led to its highest improvements under the guardianship of those laws which secure property and regulate marriage.

> Et leges sanctas docuit, et chara jugavit
> Corpora conjugiis; et magnas condidit urbes.
> *Frag. C. Licin. Calvi.*

These two great institutions convert the selfish as well as the social passions of our nature into the firmest bands of a peaceable and orderly intercourse; they change the sources of discord into principles of quiet; they discipline the most ungovernable, they refine the grossest, and they exalt the most sordid propensities; so that they become the perpetual fountain of all that strengthens, and preserves, and adorns society; they sustain the individual, and they perpetuate the race. Around these institutions all our social duties will be found at various distances to range themselves; some more near, obviously essential to the good order of human life; others more remote, and of which the necessity is not at first view so apparent; and some so distant, that their importance has been sometimes doubted, though upon more mature consideration they will be found to be outposts and advanced guards of these fundamental principles; that man should securely enjoy the fruits of his labour, and that the society of the sexes should be so wisely ordered as to make it a school of the kind affections, and a fit nursery for the commonwealth.

The subject of *property* is of great extent. It will be necessary to establish the foundation of the rights of

acquisition, alienation, and transmission, not in imaginary contracts or a pretended state of nature, but in their subserviency to the subsistence and well-being of mankind. It will not only be curious, but useful, to trace the history of property from the first loose and transient occupancy of the savage, through all the modifications which it has at different times received, to that comprehensive, subtle, and anxiously minute code of property which is the last result of the most refined civilization.

I shall observe the same order in considering the society of the sexes as it is regulated by the institution of marriage.* I shall endeavour to lay open those unalterable principles of general interest on which that institution rests: and if I entertain a hope that on this subject I may be able to add something to what our masters in morality have taught us, I trust, that the reader will bear in mind, as an excuse for my presumption, that *they* were not likely to employ much argument where they did not foresee the possibility of doubt. I shall also consider the history† of marriage, and trace it through

* See on this subject an incomparable fragment of the first book of Cicero's Economics, which is too long for insertion here, but which, if it be closely examined, may perhaps dispel the illusion of those gentlemen, who have so strangely taken it for granted, that Cicero was incapable of exact reasoning.

† This progress is traced with great accuracy in some beautiful lines of Lucretius:—

——— Mulier conjuncta viro concessit in unum;
Castaque privatæ Veneris connubia læta
Cognita sunt, prolemque ex se vidêre creatam:
TUM GENUS HUMANUM PRIMUM MOLLESCERE CŒPIT.
——————— puerique parentum
Blanditiis facile ingenium fregere superbum.
Tunc et amicitiam cœperunt jungere, habentes
Finitima inter se, nec lædere, nec violare;

all the forms which it has assumed, to that decent and happy permanency of union, which has, perhaps above all other causes, contributed to the quiet of society, and the refinement of manners in modern times. Among many other inquiries which this subject will suggest, I shall be led more particularly to examine the natural station and duties of the female sex, their condition among different nations, its improvement in Europe, and the bounds which Nature herself has prescribed to the progress of that improvement; beyond which every pretended advance will be a real degradation.

III. Having established the principles of private duty, I shall proceed to consider man under the important relation of subject and sovereign, or, in other words, of citizen and magistrate. The duties which arise from this relation I shall endeavour to establish, not upon supposed compacts, which are altogether chimerical, which must be admitted to be false in fact, which, if they are to be considered as fictions, will be found to serve no purpose of just reasoning, and to be equally the foundation of a system of universal despotism in Hobbes, and of universal anarchy in Rousseau; but on the solid basis of general convenience. Men cannot subsist without society and mutual aid; they can neither maintain social intercourse nor receive aid from each other without the protection of government; and they cannot enjoy that protection without submitting to the restraints which a just government imposes. This plain argument esta-

> Et pueros commendârunt, muliebreque sæclum;
> Vocibus et gestu cum balbè significarent,
> IMBECILLORUM ESSE ÆQUUM MISERIER OMNIUM.
>
> *Lucret.* lib. v. 1. 1010-22.

blishes the duty of obedience on the part of the citizens, and the duty of protection on that of magistrates, on the same foundation with that of every other moral duty; and it shews, with sufficient evidence, that these duties are reciprocal; the only rational end for which the fiction of a contract should have been invented. I shall not encumber my reasoning by any speculations on the origin of government; a question on which so much reason has been wasted in modern times; but which the ancients* in a higher spirit of philosophy have never once mooted. If our principles be just, our origin of government must have been coeval with that of mankind; and as no tribe has ever been discovered so brutish as to be without some government, and yet so enlightened as to establish a government by common consent, it is surely unnecessary to employ any serious argument in the confutation of the doctrine that is inconsistent with reason, and unsupported by experience. But though all inquiries into the origin of government be chimerical, yet the history of its progress is curious and useful. The various stages through which it passed from savage independence, which implies every man's power of injuring his neighbour, to legal liberty, which consists in every man's security against wrong; the manner in which a family

* The introduction to the first book of Aristotle's Politics is the best demonstration of the necessity of political society to the well-being, and indeed to the very being, of man, with which I am acquainted. Having shewn the circumstances which render man necessarily a social being, he justly concludes, "Καὶ ὅτι ἄνθρωπος φύσει πολιτικὸν ζῶον."—*Arist. de Rep.* lib. i.

The same scheme of philosophy is admirably pursued in the short, but invaluable fragment of the sixth book of Polybius, which describes the history and revolutions of government.

expands into a tribe, and tribes coalesce into a nation; in which public justice is gradually engrafted on private revenge, and temporary submission ripened into habitual obedience; form a most important and extensive subject of inquiry, which comprehends all the improvements of mankind in police, in judicature, and in legislation.

I have already given the reader to understand that the description of liberty which seems to me the most comprehensive, is that of *security against wrong*. Liberty is therefore the object of all government. Men are more free under every government, even the most imperfect. than they would be if it were possible for them to exist without any government at all: they are more secure from wrong, *more undisturbed in the exercise of their natural powers, and therefore more free, even in the most obvious and grossest sense of the word*, than if they were altogether unprotected against injury from each other. But as general security is enjoyed in very different degrees under different governments, those which guard it most perfectly, are by the way of eminence called *free*. Such governments attain most completely the end which is common to all government. A free constitution of government and a good constitution of government are therefore different expressions for the same idea.

Another material distinction, however, soon presents itself. In most civilised states the subject is tolerably protected against gross injustice from his fellows by impartial laws, which it is the manifest interest of the sovereign to enforce. But some commonwealths are so happy as to be founded on a principle of much more refined and provident wisdom. The subjects of such com-

monwealths are guarded not only against the injustice of each other, but (as far as human prudence can contrive) against oppression from the magistrate. Such states, like all other extraordinary examples of public or private excellence and happiness, are thinly scattered over the different ages and countries of the world. In them the will of the sovereign is limited with so exact a measure, that his protecting authority is not weakened. Such a combination of skill and fortune is not often to be expected, and indeed never can arise, but from the constant though gradual exertions of wisdom and virtue, to improve a long succession of most favourable circumstances.

There is indeed scarce any society so wretched as to be destitute of some sort of weak provision against the injustice of their governors. Religious institutions, favourite prejudices, national manners, have in different countries, with unequal degrees of force, checked or mitigated the exercise of supreme power. The privileges of a powerful nobility, of opulent mercantile communities, of great judicial corporations, have in some monarchies approached more near to a control on the sovereign. Means have been devised with more or less wisdom to temper the despotism of an aristocracy over their subjects, and in democracies protect the minority against the majority, and the whole people against the tyranny of demagogues. But in these unmixed forms of government, as the right of legislation is vested in one individual or in one order, it is obvious that the legislative power may shake off all the restraints which the laws have imposed on it. All such governments, therefore, tend towards despotism, and the securities which they

admit against mis-government are extremely feeble and precarious. The best security which human wisdom can devise, seems to be the distribution of political authority among different individuals and bodies, with separate interests, and separate characters, corresponding to the variety of classes of which civil society is composed, each interested to guard their own order from oppression by the rest; each also interested to prevent any of the others from seizing on exclusive, and therefore despotic power; and all having a common interest to co-operate in carrying on the ordinary and necessary administration of government. If there were not an interest to resist each other in extraordinary cases, there would not be liberty. If there were not an interest to co-operate in the ordinary course of affairs, there could be no government. The object of such wise institutions which make selfishness of governors a security against their injustice, is to protect men against wrong both from their rulers and their fellows. Such governments are, with justice, peculiarly and emphatically called *free*; and in ascribing that liberty to the skilful combination of mutual dependence and mutual check, I feel my own conviction greatly strengthened by calling to mind, that in this opinion I agree with all the wise men who have ever deeply considered the principles of politics; with Aristotle and Polybius, with Cicero and Tacitus, with Bacon and Machiavel, with Montesquieu and Hume.*

* To the weight of these great names let me add the opinion of two illustrious men of the present age, as both their opinions are combined by one of them in the following passages: "He (Mr Fox) always thought any of the simple unbalanced governments bad; simple monarchy, simple aristocracy, simple democracy; he held them

It is impossible in such a cursory sketch as the present, even to allude to a very small part of those philosophical principles, political reasonings, and historical facts, which are necessary for the illustration of this momentous subject. In a full discussion of it I shall be obliged to examine the general frame of the most celebrated governments of ancient and modern times, and especially of those which have been most renowned for their freedom. The result of such an examination will be, that no institution so detestable as an absolutely unbalanced government, perhaps ever existed; that the simple governments are mere creatures of the imagination of theorists, who have transformed names used for convenience of arrangement into real politics; that, as constitutions of government approach more nearly to that unmixed and uncontrolled simplicity they become despotic, and as they recede farther from that simplicity they become free.

By the constitution of a state, I mean "*the body of those written and unwritten fundamental laws which regulate the most important rights of the higher magistrates,*

all imperfect or vicious, all were bad by themselves; the composition alone was good. These had been always his principles, in which he agreed with his friend, Mr. Burke."—*Mr. Fox on the Army Estimates*, 9th Feb. 1790.

In speaking of both these illustrious men, whose names I here join, as they will be joined in fame by posterity, which will forget their temporary differences in the recollection of their genius and their friendship, I do not entertain the vain imagination that I can add to their glory by any thing that I can say. But it is a gratification to me to give utterance to my feelings; to express the profound veneration with which I am filled for the memory of the one, and the warm affection which I cherish for the other, who no one ever heard in public without admiration, or knew in private life without loving.

and the most essential privileges of the subjects.*" Such a body of political laws must in all countries arise out of the character and situation of a people; they must grow with its progress, be adapted to its peculiarities, change with its changes, and be incorporated with its habits. Human wisdom cannot form such a constitution by one act, for human wisdom cannot create the materials of which it is composed. The attempt, always ineffectual, to change by violence the ancient habits of men, and the established order of society, so as to fit them for an absolutely new scheme of government, flows from the most presumptuous ignorance, requires the support of the most ferocious tyranny, and leads to consequences which its authors can never foresee; generally, indeed, to institutions the most opposite to those of which they profess to seek the establishment.† But human wisdom indefatigably employed for remedying abuses, and in seizing favourable opportunities of improving that order of society which arises from causes over which we have little control, after the reforms and amendments of a series of

* *Privilege*, in Roman jurisprudence, means the *exemption* of one individual from the operation of a law. Political privileges, in the sense in which I employ the terms, mean those rights of the subjects of a free state, which are deemed so essential to the well-being of the commonwealth, that they are *excepted* from the ordinary discretion of the magistrate, and guarded by the same fundamental laws which secure his authority.

† See an admirable passage on this subject in Dr. Smith's Theory of Moral Sentiments, vol. ii. pp. 101-112, in which the true doctrine of reformation is laid down with singular ability by that eloquent and philosophical writer.—See also Mr. Burke's Speech on Economical Reform; and Sir M. Hale on the Amendment of Laws, in the collection of my learned and most excellent friend, Mr. Hargrave, p. 248.

ages, has sometimes though very rarely,* shewn itself capable of building up a free constitution, which is "the growth of time and nature, rather than the work of human invention." Such a constitution can only be formed by the wise imitation of "*the great innovator* TIME, which, indeed, innovateth greatly, but quietly, and by degrees scarce to be perceived."† Without descending to the puerile ostentation of panegyric, on that of which all mankind confess the excellence, I may observe, with truth and soberness, that a free government not only establishes an universal security against wrong, but that it also cherishes all the noblest powers of the human mind; that it tends to banish both the mean and the ferocious vices; that it improves the national character to which it is adapted, and out of which it grows; that its whole administration is a practical school of honesty and humanity; and that there the social affections, expanded into public spirit, gain a wider sphere, and a more active spring.

I shall conclude what I have to offer on government, by an account of the constitution of England. I shall endeavour to trace the progress of that constitution by the light of history, of laws, and of records, from the

* Pour former un gouvernement modéré, il faut combiner les puissances, les régler, les tempérer, les faire agir, donner pour ainsi dire un lest à l'une pour la mettre en état de résister à une autre, c'est un chef-d'œuvre de législation que le hasard fait rarement, et que rarement on lassie faire à la prudence. Un gouvernement despotique au contraire saute pour ainsi dire aux yeux; il est uniforme partout: comme il ne faut que des passions pour l'établir tout le monde est bon pour cela.—*Montesquieu, de l'Esprit de Loix*, liv. v. c. 14.

† Lord Bacon, Essay xxiv. Of Innovations.

earliest times to the present age; and to shew how the general principles of liberty, originally common to it with the other Gothic monarchies of Europe, but in other countries lost or obscured, were in this more fortunate island preserved, matured and adapted to the progress of civilization. I shall attempt to exhibit this most complicated machine, as our history and our laws shew it in action; and not as some celebrated writers have most imperfectly represented it, who have torn out a few of its more simple springs, and putting them together, miscall them the British constitution. So prevalent indeed, have these imperfect representations hitherto been, that I will venture to affirm, there is scarcely any subject which has been less treated as it deserved than the government of England. Philosophers of great and merited reputation* have told us that it consisted of certain portions of monarchy, aristocracy, and democracy; names which are, in truth, very little applicable, and which, if they were, would as little give an idea of this government, as an account of the weight of bone, of flesh, and of blood in a human body, would be a picture of a living man. Nothing but a patient and minute investigation of the practice of the government in all its parts, and through its whole history, can give us just notions on this important subject. If a lawyer, without a philosophical spirit, be unequal to the examination of this great work of liberty and wisdom, still more unequal

* The reader will perceive that I allude to MONTESQUIEU, whom I never name without reverence, though I shall presume, with humility, to criticise his account of a government which he only saw at a distance.

is a philosopher without practical, legal, and historical knowledge; for the first may want skill, but the second wants materials. The observations of Lord Bacon on political writers, in general, are most applicable to those who have given us systematic descriptions of the English constitution. "All those who have written of governments have written as philosophers, or as lawyers, *and none as statesmen.* As for the philosophers, they make imaginary laws for imaginary commonwealths, and their discourses are as the stars, which give little light because they are so high."—"*Hæc cognitio ad viros civiles propriè pertinet,*" as he tells us in another part of his writings; but unfortunately no experienced philosophical British statesman has yet devoted his leasure to a delineation of the constitution, which such a statesman alone can practically and perfectly know.

In the discussion of this great subject, and in all reasonings on the principles of politics, I shall labour, above all things, to avoid that which appears to me to have been the constant source of political error: I mean the attempt to give an air of system, of simplicity, and of rigorous demonstration, to subjects which do not admit it. The only means by which this could be done, was by referring to a few simple causes, what, in truth, arose from immense and intricate combinations, and successions of causes. The consequence was very obvious. The system of the theorist, disencumbered from all regard to the real nature of things, easily assumed an air of speciousness. It required little dexterity, to make his argument appear conclusive. But all men agreed that it

was utterly inapplicable to human affairs. The theorist railed at the folly of the world, instead of confessing his own; and the men of practice unjustly blamed philosophy, instead of condemning the sophist. The causes which the politician has to consider are, above all others, multiplied, mutable, minute, subtile, and, if I may so speak, evanescent; perpetually changing their form, and varying their combinations; losing their nature, while they keep their name; exhibiting the most different consequences in the endless variety of men and nations on whom they operate; in one degree of strength producing the most signal benefit; and, under a slight variation of circumstances, the most tremendous mischiefs. They admit indeed of being reduced to theory; but to a theory formed on the most extensive views, of the most comprehensive and flexible principles, to embrace all their varieties, and to fit all their rapid transmigrations; a theory, of which the most fundamental maxim is, distrust in itself, and deference for practical prudence. Only two writers of former times have, as far as I know, observed this general defect of political reasoners; but these two are the greatest philosophers who have ever appeared in the world. The first of them is Aristotle, who, in a passage of his Politics, to which I cannot at this moment turn, plainly condemns the pursuit of a delusive geometrical accuracy in moral reasonings as the constant source of the grossest error. The second is Lord Bacon, who tells us, with that authority of conscious wisdom which belongs to him, and with that power of richly adorning truth from the wardrobe of genius which he possessed above *almost* all men, "Civil knowledge is conversant

about a subject which, above all others, is most immersed in matter, and hardliest reduced to axiom."*

IV. I shall next endeavour to lay open the general principles of civil and criminal laws. On this subject I may with some confidence hope that I shall be enabled to philosophize with better materials by my acquaintance with the laws of my own country, which it is the business of my life to practise, and of which the study has by habit become my favourite pursuit.

The first principles of jurisprudence are simple maxims of reason, of which the observance is immediately discovered by experience to be essential to the security of men's rights, and which pervade the laws of all countries. An account of the gradual application of these original principles, first to more simple, and afterwards to more complicated cases, forms both the history and the theory of law. Such an historical account of the progress of men, in reducing justice to an applicable and practical system, will enable us to trace that chain, in which so many breaks and interruptions are perceived by superficial observers, but which in truth inseparably, though with many dark and hidden windings, links together the security of life and property with the most minute

* This principle is expressed by a writer of a very different character from these two great philosophers; a writer, "*qu'on n'appellera plus philosophe, mais qu'on appellera le plus éloquent des sophistes,*" with great force, and, as his manner is, with some exaggeration.

Il n'y a point de principes abstraits dans la politique. C'est une science des calculs, des combinaisons, et des exceptions, selon les lieux, les tems, et les circonstances.—*Lettre de Rousseau au Marquis de Mirabeau.*

The second proposition is true; but the first is not a just inference from it.

and apparently frivolous formalities of legal proceeding. We shall perceive that no human foresight is sufficient to establish such a system at once, and that, if it were so established, the occurrence of unforeseen cases would shortly altogether change it; that there is but one way of forming a civil code, either consistent with common sense, or that has ever been practised in any country, namely, that of gradually building up the law in proportion as the facts arise which it is to regulate. We shall learn to appreciate the merit of vulgar objections against the subtlety and complexity of laws. We shall estimate the good sense and the gratitude of those who reproach lawyers for employing all the powers of their mind to discover subtle distinctions for the prevention of injustice:* and we shall at once perceive that laws ought to be neither more *simple* nor more *complex* than the state of society which they are to govern, but that they ought exactly to correspond to it. Of the two faults, however, the excess of simplicity would certainly be the greatest; for laws, more complex than are necessary, would only produce embarrassment; whereas laws more simple than the affairs which they regulate would occasion a defect of justice. More understanding† has perhaps been in this manner exerted to fix the rules of life

* The casuistical subtleties are not perhaps greater than the subtleties of lawyers; *but the latter are innocent, and even necessary.* —HUME's *Essays*, vol. ii. p. 558.

† "Law," said Dr. Johnson, "is the science in which the greatest powers of understanding are applied to the greatest number of facts." Nobody, who is acquainted with the variety and multiplicity of the subjects of jurisprudence, and with the prodigious powers of discrimination employed upon them, can doubt the truth of this observation.

than in any other science; and it is certainly the most honourable occupation of the understanding, because it is the most immediately subservient to general safety and comfort. There is not, in my opinion, in the whole compass of human affairs, so noble a spectacle as that which is displayed in the progress of jurisprudence; where we may contemplate the cautious and unwearied exertions of a succession of wise men through a long course of ages; withdrawing every case as it arises from the dangerous power of discretion, and subjecting it to inflexible rules; extending the dominion of justice and reason, and gradually contracting, within the narrowest possible limits, the domain of brutal force and of arbitrary will. This subject has been treated with such dignity by a writer who is admired by all mankind for his eloquence, but who is, if possible, still more admired by all competent judges for his philosophy; a writer, of whom I may justly say, that he was "*gravissimus et dicendi et intelligendi auctor et magister;*" that I cannot refuse myself the gratification of quoting his words:—"The science of jurisprudence, the pride of the human intellect, which, with all its defects, redundancies, and errors, is the collected reason of ages combining the principles of original justice with the infinite variety of human concerns."*

I shall exemplify the progress of law, and illustrate those principles of universal justice on which it is founded, by a comparative review of the two greatest civil codes that have been hitherto formed—those of Rome and of England† of their agreements and disagree-

* Burke's Works, vol. iii. p. 134.

† On the intimate connection of these two codes, let us hear the

ments, both in general provisions, and in some of the most important parts of their minute practice. In this part of the course, which I mean to pursue with such detail as to give a view of both codes, that may perhaps be sufficient for the purposes of the general student, I hope to convince him that the laws of civilized nations, particularly those of his own, are a subject most worthy of scientific curiosity; that principle and system run through them even to the minutest particular, as really, though not so apparently, as in other sciences, and applied to purposes more important than in any other science. Will it be presumptuous to express a hope, that such an inquiry may not be altogether an useless introduction to that larger and more detailed study of the law of England, which is the duty of those who are to profess and practise that law?

In considering the important subject of criminal law it will be my duty to found, on a regard to the general safety, the right of the magistrate to inflict punishments, even the most severe, if that safety cannot be effectually protected by the example of inferior punishments. It will be a more agreeable part of my office to explain the temperaments which Wisdom, as well as Humanity, prescribes in the exercise of that harsh right, unfortunately so essential to the preservation of human society. I

words of Lord Holt, whose name never can be pronounced without veneration, as long as wisdom and integrity are revered among men: —"Inasmuch *as the laws of all nations are doubtless raised out of the ruins of the civil law*, as all governments are sprung out of the ruins of the Roman empire, it must be owned *that the principles of our law are borrowed from the civil law*, therefore grounded upon the same reason in many things,"—12 *Mod. Rep.* 482.

shall collate the penal codes of different nations, and gather together the most accurate statement of the result of experience with respect to the efficacy of lenient and severe punishments; and I shall endeavour to ascertain the principles on which must be founded both the proportion and the appropriation of penalties to crimes.

As to the *law of criminal proceeding*, my labour will be very easy; for on that subject an English lawyer, if he were to delineate the model of perfection, would find that, with few exceptions, he had transcribed the institutions of his own country. The whole subject of my lectures, of which I have now given the outline, may be summed up in the words of Cicero:—"Natura enim juris explicanda est nobis, eaque ab hominis repetenda naturâ; considerandæ leges quibus civitates regi debeant; tum hæc tractanda quæ composita sunt et descripta, jura et jussa populorum; in quibus NE NOSTRI QUIDEM POPULI LATEBUNT QUÆ VOCANTUR JURA CIVILIA."—*Cic. de Leg.* lib. i. c. 5.

V. The next great division of the subject is the law of nations, strictly and properly so called. I have already hinted at the general principles on which this law is founded. They, like all the principles of natural jurisprudence, have been more happily cultivated, and more generally obeyed, in some ages and countries than in others; and, like them, are susceptible of great variety in their application, from the character and usages of nations. I shall consider these principles in the gradation of those which are necessary to any tolerable intercourse between nations; those which are essential to all well-regulated and mutually advantageous inter-

course; and those which are highly conducive to the preservation of a mild and friendly intercourse between civilized states. Of the first class, every understanding acknowledges the necessity, and some traces of a faint reverence for them are discovered even among the most barbarous tribes; of the second, every well-informed man perceives the important use, and they have generally been respected by all polished nations; of the third, the great benefit may be read in the history of modern Europe, where alone they have been carried to their full perfection. In unfolding the first and second class of principles, I shall naturally be led to give an account of that law of nations, which, in greater or less perfection, regulated the intercourse of savages, of the Asiatic empires, and of the ancient republics. The third brings me to the consideration of the law of nations, as it is now acknowledged in Christendom. From the great extent of the subject, and the particularity to which, for reasons already given, I must here descend, it is impossible for me, within my moderate compass, to give even an outline of this part of the course. It comprehends, as every reader will perceive, the principles of national independence, the intercourse of nations in peace, the privileges of embassadors and inferior ministers, the commerce of private subjects, the grounds of just war, the mutual duties of belligerent and neutral powers, the limits of lawful hostility, the rights of conquest, the faith to be observed in warfare, the force of an armistice, of safe conducts and passports, the nature and obligation of alliances, the means of negotiation, and the authority and interpretation of treaties of peace. All these, and

many other most important and complicated subjects, with all the variety of moral reasoning, and historical examples which is necessary to illustrate them, must be fully examined in this part of the lectures, in which I shall endeavour to put together a tolerably complete practical system of the law of nations, as it has for the last two centuries been recognised in Europe.

"*Le droit des gens* est naturellement fondé sur ce principe, que les diverses nations doivent se faire, dans la paix, le plus de bien, et dans la guerre le moins de mal, qu'il est possible, sans nuire à leurs véritables intérêts.

"L'objet de la guerre c'est la victoire; celui de la victoire la conquête; celui de la conquête la conservation. De ce principe et du précédent, doivent dériver toutes les loix qui forment *le droit des gens*.

"Toutes les nations ont un droit des gens; les *Iroquois* même, qui mangent leurs prisonniers, en ont un. Ils envoient et reçoivent des embassades; ils connoissent les droits de la guerre et de la paix: le mal est que ce droit des gens n'est pas fondé sur les vrais principes."—*De l'Esprit des Loix*, liv. i. c. 3.

VI. As an important supplement to the practical system of our modern law of nations, or rather as a necessary part of it, I shall conclude with a survey of the *diplomatic and conventional law of Europe*; of the treaties which have materially affected the distribution of power and territory among the European states; the circumstances which gave rise to them, the changes which they effected, and the principles which they introduced into the public code of the Christian commonwealth. In ancient times the knowledge of this com-

ventional law was thought one of the greatest praises that could be bestowed on a name loaded with all the honours that eminence in the arts of peace and war can confer:

"Equidem existimo, judices, cùm in omni genere ac varietate artium, etiam illarum, quæ sine summo otio non facilè discuntur, Cn. Pompeius excellat, singularem quandam laudem ejus et præstabilem esse scientiam, *in fœderibus, pactionibus, conditionibus, populorum, regum, exterarum nationum:* in universo denique belli jure ac pacis."—*Cic. Orat. pro L. Corn. Balbo*, c. 6.

Information on this subject is scattered over an immense variety of voluminous compilations; not accessible to every one, and of which the perusal can be agreeable only to very few. Yet so much of these treaties has been embodied into the general law of Europe, that no man can be master of it who is not acquainted with them. The knowledge of them is necessary to negotiators and statesmen; it may sometimes be important to private men in various situations in which they may be placed; it is useful to all men who wish either to be acquainted with modern history, or to form a sound judgment on political measures. I shall endeavour to give such an abstract of it as may be sufficient for some, and a convenient guide for others in the farther progress of their studies. The treaties which I shall more particularly consider, will be those of Westphalia, of Oliva, of the Pyrenees, of Breda, of Nimeguen, of Ryswick, of Utrecht, of Aix-la-Chapelle, of Paris (1763), and of Versailles (1783). I shall shortly explain the other treaties, of which the stipulations are either alluded to, confirmed, or abrogated in those which I consider at length.

I shall subjoin an account of the diplomatic intercourse of the European powers with the Ottoman Porte, and with other princes and states who are without the pale of our ordinary federal law; together with a view of the most important treaties of commerce, their principles, and their consequences.

As an useful appendix to a practical treatise on the law of nations, some account will be given of those tribunals which in different countries of Europe decide controversies arising out of that law; of their constitution, of the extent of their authority, and of their modes of proceeding; more especially of those courts which are peculiarly appointed for that purpose by the laws of Great Britain.

Though the course, of which I have sketched the outline, may seem to comprehend so great a variety of miscellaneous subjects, yet they are all in truth closely and inseparably interwoven. The duties of men, of subjects, of princes, of lawgivers, of magistrates, and of states, are all parts of one consistent system of universal morality. Between the most abstract and elementary maxim of moral philosophy, and the most complicated controversies of civil or public law, there subsists a connexion which it will be the main object of these lectures to trace. The principle of justice, deeply rooted in the nature and interest of man, pervades the whole system, and is discoverable in every part of it, even to its minutest ramification in a legal formality, or in the construction of an article in a treaty.

I know not whether a philosopher ought to confess, that in his inquiries after truth he is biassed by any consideration; even by the love of virtue. But I, who con-

ceive that a real philosopher ought to regard truth itself chiefly on account of its subserviency to the happiness of mankind, am not ashamed to confess, that I shall feel a great consolation at the conclusion of these lectures, if, by a wide survey and an exact examination of the conditions and relations of human nature, I shall have confirmed but one individual in the conviction, that justice is the permanent interest of all men, and of all commonwealths. To discover one new link of that eternal chain by which the Author of the universe has bound together the happiness and the duty of his creatures, and indissolubly fastened their interests to each other, would fill my heart with more pleasure than all the fame with which the most ingenious paradox ever crowned the most eloquent sophist.

I shall conclude this Discourse in the noble language of two great orators and philosophers, who have, in a few words, stated the substance, the object, and the result of all morality, and politics, and law.

"Nihil est quod adhuc de republicâ putem dictum, et quo possim longius progredi, nisi sit confirmatum, non modo falsum esse illud, sine injuriâ non posse, sed hoc verissimum, sine summâ justitiâ rempublicam geri nullo modo posse."—*Cic. Frag.* lib. ii. *de Repub.*

"Justice is itself the great standing policy of civil society, and any eminent departure from it, under any circumstances, lies under the suspicion of being no policy at all."—*Burke's Works*, vol. iii. p. 207.

FINIS.

TWO WORDS

ON

LORD BROUGHAM'S AND DR. PALEY'S

NATURAL THEOLOGY.

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TWO WORDS

ON

LORD BROUGHAM'S AND DR. PALEY'S

NATURAL THEOLOGY.

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PREFACE.

"To enlighten the People" appears to be Lord Brougham's motto. We always find him actively engaged wherever a prejudice is to be overthrown, an error destroyed, or an impulse given to the diffusion of knowledge among the people. But while he calls for a reform, he leaves untouched the principle upon which social order at present is based; while he endeavours to destroy the power of the clergy, he respects religious tenets and persuasions.

It seems to us, that Lord Brougham's object in his "Discourse on Natural Theology," has been to induce the clergy to cultivate and diffuse the sciences. He endeavours to prove that natural phenomena being attributes of the Deity, it is principally by an investigation of them that we arrive at the knowledge of the existence of God, and learn to adore him; but, at the same time, Lord Brougham looks upon Theology as an inductive science, and admits the existence of God as proved by the arguments of Paley. That this system may be productive of beneficial results, we do not deny; but it is evident that the progress of the mind under its influence will go no farther than religious creeds, which will form, of necessity, the limits of the development of the human intellect.

Now, it is our conviction, that the notion of God, as conveyed by the arguments of Lord Brougham and of Paley, is an obstacle to improvement—a source of error and superstition. This is what we shall endeavour to prove, and then place the question in its proper light.

TWO WORDS,

&c.

SECTION I.

THE KNOWLEDGE OF FACTS ALONE IS ACCESSIBLE TO MAN.

WHETHER, with the powerful assistance of the telescope, man penetrates into the immensity of space, and, discovering a nebula, studies the first motions of ethereal matter condensing itself and forming suns and systems; whether, applying the goniometer to the angles of a crystal, he decomposes its complicated structure, and discovers, by mathematical analysis, the elementary molecule of a metal or of a combustible body; whether, carrying his researches into the organic world, he unravels the fibres of the ligneous tissue; whether he studies the functions of the organs, their action

and reaction; whether he even succeed in discovering the elementary vesicle which unfolds to him the first principle of life—still man can acquire the knowledge only of facts: that is to say—of matter and its qualities—of beings and their motions.

We do not see causes. What we call *causes*, or *laws of nature*, are but an assemblage of facts, of which we have ascertained the identity or the succession.

A balloon filled with gas rises in the air.

A piece of wood floats on the surface of the water.

A rock falls from a precipice.

Science teaches us that these facts, apparently different, are really identical. We class them in our memory under one formula; and it is to this formula that we give the name of *cause* or *law*. Thus we have created gravitation or attraction. Now, let a new fact present itself; for instance, suppose we are told that water in a common pump does not rise higher than thirty-two feet—if we are asked by what *law*, or from what *cause*, this phenomenon is produced, we answer, that it is by the *law* of gravitation. But this explanation evi-

dently does nothing more than connect the new observation with those we had already included in our formula; and however numerous and various the facts comprised in this formula may be, the formula will never be anything more than a process establishing their identity and connexion.

The same reasoning is applicable to other formulæ or assemblages of facts: thus the laws of light, electricity, motion, of the organic development, &c., are neither *laws* nor *causes*, in the ordinary acceptation of these words. The instance we have just given will, we conceive, suffice to make our meaning understood.

We see that facts succeed each other, and we are able to study the order of their succession. We trace the earth's course in its orbit; we understand how it revolves upon its axis, and presents successively to the sun's influence the different parts of its surface, so that, on each part, night succeeds day, and day succeeds night. Thus what we may call the *cause* of day and the *cause* of night, is the motion of the earth. The idea of *cause* is here the equivalent of *succession of*

facts; and if we wished to discover the cause of the earth's motion, we should have only to find out the anterior fact to which this motion has succeeded.

SECTION II.

WE ARRIVE AT THE KNOWLEDGE OF FACTS THROUGH THE MEDIUM OF OUR SENSES ONLY.

THE strongest, or rather the only objection in any degree worthy of being examined, which theologians can make to this proposition, so well developed by Locke, is, that mathematical truths are independent of our senses. Lord Brougham thus expresses this objection:

"It is a sufficient answer to the assertion that we arrive at the knowledge of facts through the medium of our senses only, to ask, how we know anything of mathematical truth? And in case a cavil should arise upon geometrical science (though it would be a cavil), we shall speak only of analytical; and then it is certain that the whole science of numbers, from the rules of elementary arithmetic up to the highest branches of the modern calculus, could by possibility have been discovered by a person who had never in his life been out of a dark

room—who had never touched any body but his own—nay, whose limbs had all his life been so fixed, that he had never exercised even upon his own body the sense of touch: indeed, we might even go so far as to say, who had never heard a sound uttered; for the primitive ideas of number might by possibility have suggested themselves to his mind, and been made the grounds of all further calculations. What becomes now of all our knowledge depending on the senses? But we need not go to so extreme a case as the one just put: there would be an end of the position we are dealing with, if a person so circumstanced could have discovered any one analytical or common arithmetical truth. Enough, indeed, is known to every one, how moderately soever imbued with mathematical learning, to satisfy him how little the intimations received from the senses have, or can have, to do with the whole science of number and quantity. That those intimations of the senses are themselves not all of material nature, we shall presently see."

This is our answer to Lord Brougham:

Mathematical truths, the science of number and of figure, are founded, like all other sciences,

upon the study of facts. Number, form, and dimension, are, like colour, hardness, weight, sonorousness, flavour, qualities of matter; and we may examine matter with reference to one of its qualities, without reference to the others. We can represent these qualities by signs, and combine these signs with one another; but when we combine signs, we merely combine the equivalents of facts. There is no calculation which may not be performed or represented by material means. If we take 100 pebbles, and divide them into ten equal heaps, we make with these pebbles a division perfectly analogous to that executed with numbers. It is quite clear that this reasoning is applicable to geometrical figures, and to every possible abstraction.

It is indeed conceivable, that an individual, deprived from infancy of the faculties of sight, hearing, and touch, may be able to perform combinations of numbers. He will acquire the knowledge of facts through the organs of taste and smell; he will receive an impression from food or from a smell; then a second and third impression; and so on indefinitely. The abstract idea of number will thus be formed from the recollec-

tion of received impressions. It surely will not be supposed that a being can be born and receive his development although deprived of every sense. If so extravagant a supposition could be made, we should content ourselves, till the contrary were proved, with denying that *a being deprived of all contact with matter* could have any notion of number and form, *which are qualities of matter*.

SECTION III.

HAS THE UNIVERSE BEEN CREATED?

HAS the present course of nature always existed? Has the earth always revolved in its orbit, subjected to the same laws of figure and motion? Have organized beings always continued their kind in succession, by the mode of generation, as they propagate at present on the earth?

Ocellus (five hundred years before Christ) appears to have been the first who propounded this question. He thought the world eternal, and admitted neither beginning nor end. Previously to his time, the sages and priests believed that the order of nature had a beginning; all the systems of cosmogony attributed the origin of the world to an all-powerful being, a supreme intelligence. Since Ocellus, the question has been the subject of great and animated controversy between philosophers and theologians. Nevertheless, we unhesitatingly affirm that it still remains unde-

cided, and in the same state as when brought forward by Ocellus; not a single argument on either side has been deduced from the study of facts.

"In crossing a heath," says Paley, "suppose I pitched my foot against a stone, and were asked how the stone came to be there, I might possibly answer, that, for anything I knew to the contrary, it had lain there for ever: *nor would it, perhaps, be very easy to show the absurdity of this answer.* But suppose I had found a watch upon the ground, and it should be inquired how the watch happened to be in that place, I should hardly think of the answer which I had before given, that, for anything I knew, the watch might have always been there. Yet, why should not this answer serve for the watch as well as for the stone? why is it not as admissible in the second case as in the first? For this reason, and for no other; viz.: that when we come to inspect the watch, we perceive (what we could not discover in the stone) that its several parts are framed and put together for a purpose—*e. g.*, that they are so formed and adjusted as to produce motion, and that motion so regulated as to point out the hour of the day; that, if the several parts had been differently

shaped from what they are, or placed after any other manner, or in any other order, than that in which they are placed, either no motion at all would have been carried on in the machine, or none which would have answered the use that is now served by it. To reckon up a few of the plainest of these parts, and of their offices, all tending to one result: we see a cylindrical box containing a coiled elastic spring," &c.

Paley here describes the action of the spring putting in motion the works of the watch. He then supposes it endowed with the power of producing other watches similar to itself; "(The thing," he says, "is conceivable;) that it contained within it a mechanism, a system of parts, a mould, for instance, or a complete adjustment of lathes, files, and other tools, evidently and separately calculated for this purpose; let us inquire what effect ought such a discovery to have upon his former conclusion?"

. . . .

"The conclusion which the first examination of the watch, of its works, construction, and movement, suggested, was, that it must have had, for the cause and author of that construction, an arti-

ficer who understood its mechanism and designed its use. This conclusion is invincible."

"What effect would the second examination have, or ought it to have, upon our former inference? What, but to increase beyond measure our admiration of the skill which had been employed in the formation of such a machine? Or shall it, instead of this, all at once turn us round to an opposite conclusion, viz.: that no art or skill whatever has been concerned in the business, although all other evidence of art and skill remain as they were, and this last and supreme piece of art be now added to the rest? Can this be maintained without absurdity? Yet this is Atheism.

"This is Atheism; for every indication of contrivance, every manifestation of design which existed in the watch, exists in the works of nature; with the difference, on the side of nature, of being greater and more, and that in a degree which exceeds all computation."

Paley then pursues his argument, always comparing beings or natural productions to objects made by the hand of man. Thus he compares the eye to the telescope: both are constructed, according to him, upon the same principle.

"Every observation," says he, "which was made in our first chapter concerning the watch, may be repeated with strict propriety concerning the eye—concerning animals, concerning plants, concerning, indeed, all the organized parts of the works of nature."

The whole argument of his work is contained in the rapid analysis which we have just made. He admits that it has always been his opinion with regard to astronomy, "that it is not the best medium through which to prove the agency of an intelligent Creator; but that, this being proved, it shows beyond all other sciences the magnificence of his operations."

Paley's work has had a very extensive circulation in England. It has gone through a great many editions, previous to this now preparing under the patronage of Lord Brougham. Nevertheless, this author's arguments are nothing more than one continued sophism. He applies analogical reasoning to phenomena belonging to orders or classes essentially different; he compares things between which no analogy subsists; he groups together facts which are not identical, and which cannot have succeeded each other. He

then supposes an impossibility; and when a man supposes an impossibility, he necessarily falls into absurdity.

If I find a watch upon the ground, I shall certainly know, upon examining it, although I may never have seen a watch before, that it has been constructed by a workman. I shall perfectly comprehend that an intellectual power has conceived the plan of its construction—has calculated the force of the spring, the action of the chain, of the works, and their component parts; that these parts have been severally made with a reference to one another, and that they adapt themselves in perfect order, so as to form one harmonious and complete whole. But the idea of the creation of the watch will be accompanied with that of the means employed in constructing it. I shall see that the workman's knowledge—that is to say, the impressions received by his senses—have pointed out to him the elasticity of the metal composing the spring,—have made him acquainted with the properties of the lever which regulates the works,—that he has thus been able to discover the different motions which the several parts must perform, in order to attain the

object which he had in view. I shall perceive that he has realized his plan through the means of organs; that he has measured the dimensions, the forms, and ascertained the connexion of the different parts; that he has fixed and adjusted them: in short, I shall find it impossible to separate the idea of the figure of the work from the figure of the artificer. The idea of the watch will be immediately followed by the idea of a being who has in its construction employed eyes, arms, hands—who has acted upon matter, by arranging a certain number of facts under the conditions requisite to ensure their succeeding each other.

Now, if I examine a living being—if I study the mechanism of its structure, I immediately discover the connexion of the osseous parts with each other, the action of the muscles, &c.; I see that external objects act upon the senses—that the senses act upon the organ of thought—that this latter re-acts upon the senses, and the senses upon matter; but I can go no farther;—I cannot discover the spring which produces motion, which constitutes the generating fact, as I found it in the watch. I do not see, I cannot picture to myself what makes me exist, what it is

that makes me feel or think, in the same manner as I see and picture to myself the workman who made the watch. I can no longer reason by induction; the chain of facts is broken; there no longer exists any analogy; I cannot bring my reason to compare intelligence or life to a steel spring. The idea of the workman who created the watch with all its works, would lead me to the idea of an organized being, who employed hands, eyes, an intellectual power (that is to say, an organ of thought), to produce the living animal: it would be a God with senses, organs, brains!—a human God—a monstrous God!

To maintain with Lord Brougham, "that the eye could not have been made without a knowledge of optics, and, as it could not make itself, and as no human artist, though possessed of the knowledge, has the skill and power to fashion it by his handiwork, that there must exist some *Being* of *knowledge, skill,* and *power* superior to our own, and sufficient to create it," is the same thing as to suppose a being that has arrived, through the medium of his senses, to the knowledge of the qualities of matter. The very idea that we form to ourselves of a *being,* supposes the

possession of organs and senses. The idea of skill or power is equivalent to that of *cause*. It is the idea produced by the succession of facts: the idea of a fact antecedent to another fact.

The supposition of the watch re-producing itself is, as we have already stated, absurd; and we should conceive that we were offering an insult to the age in which we live, if we were to pause in order to examine it. We must do Lord Brougham the justice to state that he has not repeated it in his "Discourse." Indeed, it forms no part of the argument, as it could have no other effect than to increase our admiration for the workman who could have produced so astonishing a piece of mechanism; and when, in our contemplation of the wonders of nature, we exclaim—How beautiful! how admirable! how sublime! we still have proved nothing, except our utter incapacity to understand them.

We conclude, then, that if we can see why the watch points out the hours, it is because we can touch the spring. If we understand that it has not always existed, it is because we can recur to the fact antecedent to its existence: this fact is the workman, or the work of his hands. But it is

impossible for us to discover the cause which makes the being live and think. If we endeavour to ascertain the fact antecedent to his existence, far from arriving at the notion of a beginning, we inevitably come to the idea of a perpetual succession, produced by generation, without reaching a resting-place, or a commencement in the past. Now, the arguments of Lord Brougham and of Paley having failed in proving anything, we still can only say with Ocellus—The earth has always revolved on its orbit: life has always existed upon the earth. Abandoning, then, this deceptive analogy, the utter inefficiency of which must be obvious, let us retrace our steps, and return to the stone upon which we placed our foot; and as, when we endeavoured to discover the origin of the watch, we examined the watch, so, in order to discover the origin of the stone, let us examine the stone.

SECTION IV.

HAS THE INORGANIC WORLD HAD A BEGINNING?

THAT stone has not always lain there, for I see that it is composed of fragments of other stones, united together by a cementing matter. I find that these fragments can be re-united at the corresponding surfaces of their fractures; and I am instantly led, by reasoning, to the conclusion that several facts preceded its formation. My mind now acquires new light: it is in the study of nature itself that I shall ascertain in what manner natural facts have succeeded each other. Casting my eyes around me, I endeavour to discover whence the stone may have proceeded, and I perceive the rock from whence it has been detached. I see that this rock forms part of a system of strata of a determined thickness; and penetrating deeper, I find a series of strata, each containing fragments derived from the anterior stratum, united by a cementing matter, differing according to the strata. Several indications show

me that these strata were deposited in a liquid containing a mineral principle, which has varied from circumstances I can account for. At length I come to a rock which is not stratified, which does not present traces of the action of water, and I find this rock to be the same in every part of the earth, constantly forming the base of other rocks. It contains no fragments that can indicate a pre-existing rock. By examining its nature, I ascertain that it was originally melted by fire, as the lava which flows down the slopes of a volcano. I come, consequently, to the notion of the igneous fusion of the globe. The earth is an incrusted star, extinguished only at its surface*; and I recur, in idea, to the period when the ethereal matter was condensed to form spheres†.

The direct study of the facts which have preceded the origin of the stone, brings me to this conclusion: The established course of nature has not existed for ever; the earth has not always revolved in its orbit; the inorganic world has had a commencement.

* Descartes and Leibnitz. † Herschell and Laplace.

SECTION V.

HAS THE ORGANIC WORLD HAD A BEGINNING?

THIS problem is already solved by the exposition of the facts contained in the answer to the preceding question.

It is indeed evident, that if the earth was primitively in the state of gas, or even only in that of igneous fusion, animals and plants could not exist upon the surface, until it presented a solid basis upon which they could move, or fix themselves. This surface must have cooled until the degree of heat did not exceed that under which organized beings can be produced and multiply. The temperature of the atmosphere must have diminished to that point at which water can alternately be formed into vapour and condensed. In short, the organic world can only have begun to exist when every condition of animal and vegetable life was fulfilled. But the phenomena of the organic kingdom will also furnish us with the proof of its having had a beginning on earth.

I break this stone, the first examination of which has already pointed out to me the method I was to follow, in order to retrace the series of facts belonging to the past inorganic world, and in the middle of the fragments I discover the bones of a fossil animal. I examine the different strata deposited by the waters, which form the exterior envelop of the earth; I everywhere discover remains of vegetable and animal life; but when I come to the primitive rock, which bears the impress of the action of fire, I no longer meet with these fragments; and the entire absence of every indication of life leads me still to say—Organized beings have not from all eternity succeeded each other upon the earth—the organic world has not always existed.

SECTION VI.

HOW DID THE INORGANIC AND ORGANIC WORLD BEGIN?

WHAT are the facts which preceded and accompanied the existence of the centres of attraction in space, and the appearance upon earth of organized beings?

Such is, we conceive, the manner in which the question of GOD must be presented. It is through the knowledge of these facts alone that we can come to the knowledge of the Deity. It is for us to employ in this inquiry all the powers of our organs multiplied by art, and of our reason strengthened by science.

"Theology is not a science. . . . . It is only by the knowledge of the history of the earth that the imagination can attain to the knowledge of its formation. Warned by innumerable errors, imagination no longer attempts to explain the

phenomena of nature without following the guidance of experience *."

The religious feeling is nothing else but an instinctive desire to inquire into the phenomena which preceded the established order of things.

* Helvetius.

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THE

HISTORY OF THE EARTH

BEFORE HUMAN TRADITION:

OR

THE PHILOSOPHY OF GEOLOGY.

BY A. C. G. JOBERT.

ILLUSTRATED WITH FOUR PLATES.

INTRODUCTION.

IT is a truth, proved by the experience of ages, that the general results of the labours of the learned in the physical and natural sciences make their way very slowly among mankind. Civilization receives with difficulty the impression of these sciences, and a considerable period elapses before a new principle revealed by them can be infused into the general mind. How many obstacles were to be overcome before the grand discoveries of a Descartes, a Galileo, and a Newton, were admitted as truths even by enlightened men? Did not Voltaire assail with sarcasm those philosophic observers who proclaimed truths which are now undisputed? Did not this great writer, for instance, attempt to throw ridicule upon those naturalists who deduced the proof of the sea having once covered certain parts of our existing continents from the fact of enor-

mous beds of accumulated marine deposits having been found there? Even at the present time the intellectual world moves in an orbit nearly unconnected with these sciences, whose philosophical results remain buried, for the most part, in the obscurity of the closet; and while the other branches of human knowledge,—politics, history, the fine arts, even the mathematical sciences,—all contribute to the advancement of civilization, the physical and natural sciences scarcely contribute even in the slightest degree. And yet these sciences were never so generally cultivated as at the present day: the scientific men of all countries collect facts, class them and methodise them; but every one labours in his own department: each division of the sciences enlarges its own boundaries, but we see few comprehensive sketches, few general views, presenting and developing the results in a popular manner. It is by a species of filtration, and only, as it were, drop by drop, that science penetrates into the general mass of society. The movement towards that perfectibility in which the whole human race must eventually participate is thus necessarily retarded through the want of co-operation in the sciences.

I am far from asserting that the writers of the present day neglect altogether to avail themselves of the labours of their scientific contemporaries, but seldom do they borrow with discrimination and judgment,—they take from science those propositions alone which go to support a predetermined conclusion; they seek for and adopt those proofs which they want, and reject every consideration which has a contrary tendency: they almost always deceive themselves, even when it is not their object to deceive others.

On the other hand, we sometimes see those who have made the most splendid discoveries, endeavour to adapt new results to worn-out systems, to make recent facts subservient to decayed doctrines, and envelope in the shrouds of death a discovery which teems with life. These aberrations of genius are deeply to be lamented; they retard the progress of philosophy almost in the same degree that the study of positive facts advances science. It will be a difficult task, at some future time, for men of science, with less celebrity but more discernment and conscientiousness, to destroy these fatal errors. The famous *magister dixit* will long be the obstacle to every effort made to destroy prejudices upheld by the authority of a great name. Error will ultimately be dispelled but it will impede the progress of civilization, and generations may pass away before the science diffused among the mass of mankind shall be freed from the false maxims imposed upon it by the science of the learned.

It is an error to suppose that it is necessary to know, in their minutest details, all the nomenclatures, or even all the elements, of a science, in order to attain a knowledge of the science itself, and clearly to understand its generalizations. It is quite possible to acquire very correct ideas upon vegetable physiology without burdening the memory with the names of fifty thousand species or varieties of plants. One may, without being a great mathematician, and without having learned the names and positions of the stars, possess very accurate notions on astronomy. In the system of the world, by Laplace, there are neither algebraical symbols nor difficult technical descriptions; and yet the whole science is com-

prised in those few chapters which are perfectly accessible to an ordinary capacity. A master-mind, it is true, drew the sketch, and it is not in the power of every one to condense in so easy a synthesis a multitude of facts obtained by a laborious analysis. But it will always remain a truth that the generalizations of science may be expressed in the usual language of society. It is the only means of diffusing them, and if there are no philosophers sufficiently zealous to undertake the task, the learned world, consisting of so limited a number, will ever remain a world by itself, entirely unconnected with the masses of mankind who will proceed in civilization without them, but whose civilization, for that very reason, will remain incomplete and full of errors.

The most beneficial consequences must necessarily follow from a course of instruction which has for its object the diffusion among society of the general results of the labours of men of science, which gives enlightened men better means of avoiding the errors accredited by the learned themselves, and tends to make the physical sciences co-operate towards the advancement of civilization with as much rapidity as the other sciences.

These considerations have led me to conceive the idea of the present work. By my previous scientific publications, I have contributed my mite to the stock of physical knowledge. But if I succeed in convincing the reader of the advantages which must result to civilization from a greater diffusion of these sciences, a more rapid circulation of their philosophical results, I shall feel that I have rendered to society a much greater and more permanent service.

Geology is a new science, but still it is indebted to the older sciences. Although special it divides itself into numerous branches, which have their roots in almost every other science. None can more readily be made the subject of synthetical demonstration nor comprehend in their systems a greater number of facts. Among the inferences which I shall deduce from the exposition of facts, several are perfectly novel, and belong entirely to myself; I feel it necessary to make this statement that I may not be supposed to give to my words more weight than they really possess.

I shall, moreover, endeavour to present my opinions with that degree of probability only which they may fairly claim. Sincerity ought to be the chief characteristic of every writer.

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NATURAL THEOLOGY:

THE ARGUMENTS

OF

PALEY, BROUGHAM,

AND

THE BRIDGEWATER TREATISES

ON THIS SUBJECT EXAMINED:

ALSO

THE DOCTRINES OF

BROUGHAM AND THE IMMATERIALISTS

RESPECTING THE SOUL.

By GEORGE ENSOR, Esq.

This Tract was printed for the Author's friends, but may be reprinted by any one.

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NATURAL THEOLOGY.

THE ARGUMENTS OF PALEY, BROUGHAM, AND THE BRIDGEWATER TREATISES, EXAMINED.

WRITERS on Theology are almost infinite, and they began with the dawn of letters. Poets, philosophers, and orators have contributed their various powers to the discussion. Orpheus led the way among those inspired by the Muses; and amidst Grecian sages, Aristotle in his Metaphysics noticed the subject, and divided it into the natural and civil: the latter he esteemed fabulous and intended to deceive. Cicero wrote an entire treatise *de Natura Deorum.* The schoolmen of course composed folio volumes on the same subject, each longer than the novels of Scuderi: this was the age of interminable debates on vermiculate questions of suppositions without facts, and arguments without a trace of reasoning. In after times Leibnitz wrote on metaphysical theology, and many Germans before and after have dis-

cussed the same topic, mistaking an abuse of language for new and improved views on that question. We have had in England also a large contribution in the same class, Physico-Theology, Astro-Theology, &c.; and lastly, Lord Brougham (a man unequalled for the diversity of his knowledge, his power and facility in writing and speaking, and, perhaps, still more distinguished for his unwearied zeal in advancing education in all departments of knowledge,) has added to the increasing host a Discourse on Natural Theology. He states that his objects in this treatise are "to explain the nature of the evidence upon which natural theology rests, and to show that it is a science, the truths of which are discovered by induction like the truths of natural or moral philosophy." (p. 7, 2nd edition, always used.) The subject is therefore necessarily relieved from the limits of faith or of belief as contradistinguished from reason, and of course detached from all peculiarities connected with particular religions. To admit faith in this discussion would evidently be to mistake the object and the means of debate, and offend against Bacon's repeated warning, "to give faith nothing that is not faith's." (Works, vol. ii. p. 363, Shaw's edition, always used.) I may add, that as the subject is not properly religious but philosophical, it should not excite any very angry passions among sectarians or religionists; yet still I more than fear that some, from weakness, or ignorance, or hypocrisy, will be of-

fended if Lord Brougham's and his predecessors' views be controverted, their facts tested, and their logic arraigned; for it is not uncommon with parties to confound the manner of treating a topic with the matter itself: hence the subject being approved by them, the defence for it receives a kind reception, and even when most faulty it is approached with reserve if not with respect, while the contravening critic is denounced as unadvised, hostile, if not insidious, criminal, or prompting, as they suggest, under the veil of romantic truth, the reader to listen to ruinous conclusions. Yet it is certain that philosophy should be discussed philosophically, and that truth never can be injured by truth, though it is frequently tainted and paralysed by falsehood and hypocrisy.

Lord Brougham says it was intended that the "Society for the Diffusion of Useful Knowledge should publish an edition of Paley's Essay on Natural Theology, but that the project was abandoned lest it might introduce a religious controversy among the members of the Society." Whether he was in the minority on this occasion does not appear, yet hence the publication of his present essay, and, no doubt, what is unsuited for an aggregate of persons may not be unfitting for an individual. But why Paley's work should be chosen as the text for a society or by an individual in the present state of positive knowledge and advanced opinions has not been explained. Yet such is the fact, and further, this essay is but a preface

to an enlarged republication of Paley's Theology by Lord Brougham, with the cooperation of Sir Charles Bell, in which Lord Brougham says they have made considerable progress. We may also go higher and ask whence the necessity at all of the discussion? Is theology attacked? is the Deity denied? Long since Bacon said, "In this part of Natural Theology we find rather an excess than a defect." (vol. i. p. 72.) Yet since he wrote, a thousand volumes on this topic, in all its bearings, have been composed; and even while Lord Brougham was writing singly and in partnership, a bequest of 8000*l.* enlisted as many authors as thousands in the legacy, who have pressed all subjects in aid of the same purpose, from "the human hand" to "the function of digestion." Yet Lord Brougham, whatever he may hereafter effect, has published no novelty in respect to Natural Theology. The beginning, midst, and end of all his arguments rest on Final Causes; a process of reasoning which was repudiated by the great apostle of modern philosophy. The fact is notorious. Lord Brougham remarks, rather reprovingly, that *Lord Bacon has not indulged in any speculation akin to Natural Theology*, and that in his Sylva Sylvarum "he has not made any allusion to final causes," (p. 147). He further says, "there is hardly any writer upon moral or natural science in whose works fewer references can be found to the power or wisdom of a superintending Providence." Lord Brougham is anxious,

however, to weaken this discredit to his argument, and to infer that if Lord Bacon was not a friend he at worst was but a questionable opponent to the philosophical application of final causes, and he industriously collects some casualties of expression which he urges as a qualified approbation of them. Well; as Homer nodded, according to Horace, why might not Bacon *nictitate*? And there is another nodding when a philosophical writer vails to established error; as the learned Jesuits, who, when they published Newton's Philosophy, prefaced the work by condemning its contents, for the orthodox reason that the Pontificate had decreed that the earth did not move. I do not say that Bacon admitted, with a saving faith, a final cause to conciliate the Protestant pontiffs, great and small; but as an example of his very few seeming backslidings in many disquisitions I subjoin the following: "These final causes, however, are not false or unworthy of inquiry in metaphysics, but their excursion into the limits of *physical causes* hath made a great devastation in that province; otherwise, when contained within their own bounds, they are not repugnant to physical causes; for the cause that the hairs of the eyelids are to preserve the sight is no way contradictory to this, that pilosity is incident to the orifices of moisture, and so of the rest. These two kinds of causes agreeing excellently together, the one expressing the intention, the other the consequence only." So much saith Bacon for final causes; and if this

be an authority, let their professed advocates proclaim their ally. But there are various pilosities on the human body,—what are their final causes? Could they be brought within the same scheme of reference even if man's body was studded with eyes like Argus? And how are these pilosities treated by mankind? Long hair and short hair, in my experience, have had their turn; in an age preceding wigs were honoured; and even at this day the bench and bar are wigged in respect to Conservative precedents common to a period of bygone gentility, and learned serjeants have their wigs tonsured, a device lay and clerical, and in sheer opposition to the Chinese in office, who nourish a central tuft. Then the beard: what would the Jupiters, or the Jews, who were ordered not to mar the corners of their beards, or the Turks be without beards sweeping their bosoms? In this Christians also concurred, for Dudley North observes, that at Archangel "the men count it a sin to have either long hair or a short beard." In other countries this is reversed; in England who has not heard of love-locks denounced episcopally, and in Ireland of the glibbes made penal by the law of Henry the Eighth? The ancient Britons were content with moustaches like the more terrible military man; while the modern fashionables nourish an undergrowth about the nether joles which involves the face, as the acanthus is said to have changed a block of stone into a Corinthian capital. Then, whole nations consider hair a

beastly excrescence, to be rubbed off as it appears, and eradicated at once and for ever.

Final causes cannot be brought within the pale of Bacon's philosophy, nor can they even enjoy a toleration, though Lord Brougham is anxious to qualify his mighty predecessor's peremptory rejection of them. Bacon, if his own actual discoveries were limited, revealed the earthly and heavenly ways of discovery; his views were simple, his purpose universal. He declared for facts deduced from exact observation, and he taught, according to the homely phrase of his scholar Locke, to "stop when you are at the end of your tether;" he did not transgress the limits he prescribed to others. Yet no one from his fancy and imagination, and the untutored æra in which he flourished, was more likely to luxuriate, not occasionally, but to run riot in language and speculation, for with overpowering genius he cropped the flowers of all literature, and made the arts and sciences the zodiac of his intellectual course. However so qualified and adorned, he was a rigid dialectician; he would not depose philosophy nor enshrine it with conceit, though thus he was sure of winning the low popularity which follows the glorification of final causes. On the contrary, he compared them with peculiar felicity to a virgin dedicated to God, and sterile in her generation, an expression which might of itself be conclusive of Bacon's judgement on the point; but similar remarks more than once occur in the *Novum Or-*

ganum: he says, vol. ii. p. 354, "But the impotence of the mind proves more pernicious in the discovery of causes: for although the highest universal in nature ought to be positive things, because they are found and cannot be made, yet the understanding, not knowing how to stop, is still desirous of higher satisfaction, and endeavouring to stretch further light upon *final causes*, which are plainly of the nature of man rather than of the nature of the universe." And does not Lord Brougham exemplify this observation in his own mode of accounting for final causes? thus, "Had I to accomplish this purpose, I should have used some such means; or had I used these means, I should have thought I was accomplishing some such purpose." (p. 78.) Mark, again, how this statement of Lord Brougham is anticipated by Bacon in another Essay (vol. i. p. 133); he says, "Men make themselves, as it were, the mirror and rule of nature. It is incredible what a number of idols have been introduced into philosophy by the reduction of natural operations to a correspondence with human actions,—that is, by imagining nature acts as a man does, which is not much better than the heresy of the anthropomorphites that sprung up in the cells and solitude of ignorant monks." The interpreters of final causes (final causes being* a hysteron-pro-

* Buffon says, "Car ceux qui croient y repondre par des causes finales ne font pas attention qu'ils prennent l'effet pour la cause." (tom. iii. p. 44.)

teron, a postliminious preface,) are not only presumptuous, but pernicious to the credit of the subject matter; for when they mistake facts they injure their cause by their ignorance, and when their explanations fall short of what they propose to effect, they tempt those disposed to concur, if not inopportunely urged, to stand at bay and deny the conclusions which otherwise they would have freely adopted. The final-cause expositor acts dexterously, and he explains and is approved; but some of his expositions are not swallowed glibly, and at last his ingenuity or effrontery failing, he is forced to admit that the question exceeds his capacity, taking discount at the same time for humility by acknowledging the limited scope of man's mind. The final-cause expositors, and the best of them, frequently offend against all discretion. Dr. Roget, in his Bridgewater Treatise, says "he had admitted only such facts as afford manifest evidence of design." (Preface, p. ix.) Yet in speaking of thorns, prickles, &c. on different plants, he dogmatizes that they are intended particularly to prevent them from the molestation of animals, and he instances a nettle. Why should a nettle be so preserved instead of thousands of other plants? But is the nettle unmolested? No, for he says that fifty different species of insects feed upon it. (vol. ii. p. 59.) Verily we may, with the old Roman in Shakespear, remark, "We call a nettle but a nettle, and the faults of fools but folly." This is, however, but the

beginning and basis of the extravagance, for he subjoins, "the sting of the nettle is of this class, and its structure bears a striking analogy to that of the poisonous fangs of serpents." (vol. i. p. 94.) Why is the rattlesnake,—which, by the by, bears to be thawed and frozen alternately without ceasing to live,—protected by so potent a defence; or rather why is he armed against all animals that may inadvertently approach his retreat, and thus deserve, in respect to the final causes of his fangs and poison, the title of *Crotalus horridus*?

The arguers and interpreters of final causes are not less at variance with facts than with circumstances. Professor Buckland declares that the stays of the plesiosaurus were intended to protect the frailty of the form of this extinct race, because without this peculiar investment it would be destitute of defence; that is, it was made weak by nature to be artificially strengthened by nature. Again, these writers are enraptured with the provident arrangement which enables the gazelle, antelope, deer, &c., by their swiftness and watchfulness to escape their natural enemies, and then they express equal admiration that these natural enemies have their feet covered with hair to deaden the sound of their approaching feet; and further, that they are particularly formed for surprise by bounding on their prey. Dr. Roget adds, "Lions and tigers, who feed on gazelles and the like, have jaws and teeth formed for mastication and the destruction of life." (vol. ii. p. 145.) Thus it is clear,

these final causes counteract each other: one set of animals are qualified by nature to eat the other, and these are aided by nature not to be eaten by them; though they supply their means of living. This is the philosophy of final causes, which is to teach us wisdom, not only beyond Bacon's science, but in opposition to his sagacity; and this philosophy is honoured by the Edinburgh Review, No. 121, and which glorifies the final-cause observations in Roget's treatise, proving, says the reviewer, "*the provident arrangement of the creation,*" and adding, that "*knowledge is the wing wherewith we fly to heaven*": aye, *sic itur ad astra.*

The final-causers also say that nature always acts by the simplest means. Why, the *Crotalus horridus* just mentioned has two hundred vertebræ. The common earthworm has more than half that number of holes on its back for vital purposes. Lyonnet counted in one species of caterpillar four thousand muscular bands; and Roget (vol. i. p. 69.) speaks of the eye of the cod-fish in the following words: "This little spherical body, scarcely larger than a pea, is composed of five millions of fibres, which lock into one another by means of more than sixty-two thousand five hundred millions of teeth." I repeat, I am not so monstrously absurd as to object to nature in the arrangement of the world and of its inhabitants, but I object to the self-sufficiency of the animal man, that atom on the fidgets, assuming that his capacity embraces the principles, progress, and

destination of all beings animate and inanimate. This outdoes Protagoras, who said, "Man is the measure of all things." Again, the descanters on final causes recapitulate the ingenuity and efforts of nature in the production and maintenance of children. Those who press overbearingly these points challenge persons otherwise unobservant to recollect that many children are stillborn, and that one half of those born alive die in the first years of infancy; and they make this remark not to depreciate nature, as their opponents might insinuate, but to check their verbose and tyrannous presumption. It is also stated by them that nature is most anxious to perpetuate the races of animals and to extend life over the surface of the globe. Yet, not to speak of lands once populous now deserted, the earth has been repeatedly overwhelmed, millions of beings having been swept about the globe, and sunk and drowned; huddled together, or separated incongruously, in respect to climates, zones, and earth, and ocean; while long before these elemental excesses, still greater revolutions smote the globe, and worlds of animals have been so entirely extinguished that their existence is only known by their occasionally disinterred fossil remains. To refer to a great name on this subject lately deceased: Cuvier says "that the revolutions and changes on the earth's surface have been numerous" (p. 9.); "that oviparous quadrupeds are more frequent than viviparous quadrupeds; that they are more abundant, larger, and more various

in the older layers than at the actual surface of the globe" (p. 67.); and he gives the following summary at p. 225: "It is certain that we are at present at least in the midst of a fourth succession of terrestrial animals; and that after the age of reptiles, after that of palæotheria, after that of mammoths, mastodonta and megatheria, the age arrived in which the human species, together with some domestic animals, governs and fertilizes the earth peaceably; and it is only in formations subsequent to this period, in alluvial deposits, in turf-bogs, in the recent concretions, that those bones are found in a fossil state which all belong to animals known and now existing." In whatever way we consider the language and doctrine of these self-instituted interpreters of nature, their arrogance startles us; yet, with all their self-sufficiency and superciliousness, they are often as lost in the fields of speculation as those vulgar Athenians mentioned by Hobhouse, who consider the ancient statues real bodies, but enchanted for a time in their present petrifaction; or as the Siberians, who believe that the mighty fossil bones found in their country belonged to creatures which still continue to live beneath the earth; or as the Esquimaux, who on seeing ships asked Sacheuse if they could fly as well as sail, (Fisher, Philips's Voyages, p. 59.) a conjecture not so extraordinary, by the by, as Kepler's, who in his early speculation thought that the planets were animals which floated round the sun with wings. Yet none of these modern Athe-

nians, Siberians, or Esquimaux extended their deductions to final causes. It is surprising that men do not hesitate to pronounce their opinions on matters so remote from their possible cognizance. Their daily errors in speculation might chasten their arrogance, for nothing is more common in their explanations than to mistake not only the intent but the object, and this not merely in natural things but in artificial objects, and it happens that the meanest appearances are sometimes honoured with the sublimest commentary. Salt relates the following anecdote: "The French represented four flying birds with human heads like cherubs, which they conjectured most happily to be the souls of the blessed after passing through the ordeal judgement; but unfortunately, it happens, on examining these cherubs with a light they proved to be gazelles' or goats' heads reversed, rather a common representation on the tombs, the horns being mistaken for birds legs, the ears for their tails, and the neck where it is cut off for the wings," &c. (Salt's Life, vol. ii. p. 50.) Here is a specimen of the blunders of men respecting things made by human hands. Daily and hourly men mistake the motives and objects of men, their fellows of their own profession; they mistake flagrantly and notoriously their own motives for their own actions, yet they pronounce authoritatively on the cause and purposes of vegetable and animal life, and the causes of all things on the earth and in the heavens,—neither,

most certainly, made by man, he himself being earth-born and earth-buried. Yet how contrary, doubly so if possible, is their presumption, even taking Roget as our director; he says: "The more an organ of sense differs in its structure from those which we ourselves possess, the more uncertain must be our knowledge of its functions." (vol. ii. p. 572.) This observation regards animals corresponding with us in various ways, and it applies to organs of sense common to us and them. But has the Deity, embracing the universe in his mightiness, organs and senses like man's; or have we rationally any grounds for drawing any conclusion respecting the mode of his energy and apprehension? Affirmatively none, though negatively we might perhaps assume that the Deity must be very dissimilar from man; yet weak man pronounces on the objects, purposes, and designs of God, as if God and man were homogeneal and grew up together, and served the same apprenticeship, and were confidential associates in preparing the infinite arrangements in the great laboratory of space; yet to reproduce one of the simplest organic products by an artificial combination of its elements has baffled all the efforts of modern philosophers. The doctrine of final causes implies transcendental egotism and impertinence. Hence surely Bacon was justified in referring arguments from such sources to *impotentia mentis*.

I have stated that Lord Brougham's Natural Theology is in some measure a preface to his

intended edition of Paley's Natural Theology. The present essay conforms in many respects to Paley's work, even to the commencing illustration of their common argument. Both in fact begin with the eye. Paley also in his preliminary remarks has a whimsical discussion on what, for want of a title from the ancient dialecticians, may be designated *lost and found.* He says, "Suppose I had found a watch on the ground, and it should be inquired how the watch happened to be in that place."—(*Why, O Paley, you would say it was dropped there.*)—He then proceeds, supposing he had inspected the watch, " We perceive that its several parts are framed and put together for a purpose, e. g. that they are so formed and adjusted as to produce motion, and that motion so regulated as to point out the hour of the day," &c. p. 1. (*Excellent guess! I, Paley, having the ditto in my fob.*) He then runs over the different parts of the work of the watch, concluding, " The inference, we think, is inevitable, that the watch must have had a maker, that there must have existed, at some time and at some place or other, an artificer or artificers who formed it for the purpose which we find it actually to answer, who comprehended its construction and designed its use." (p. 3.) This argument is continued through the first two chapters; it is the basis of the whole volume. Never was any position more gratuitous or sophistical. What sort of person and in what state of society, to give any colour to the device, is this

hypothetical watch-finder? Civilized or otherwise, skilled in mechanism or ignorant of its rudiments? For any purpose of reasoning or illustration he should be considered as having no knowledge of watches. Now, suppose a watch dropped among savages—suppose it going: it is taken up; it might be imagined they would regard it on the ground for some time with surprise if not with alarm: the hands move, it ticks. Suppose it laid open and inspected; so far from ignorant people believing it was a machine made by their fellow man, they would probably refer it to supernatural agency, if they speculated on cause and effect, or assume that it was one of an unknown class of living things propagated by parents or growing like plants. In the South Sea islands nails were so considered, and a native sowed the second that he had obtained, expecting it would produce a crop of nails when the yams were ready to be dug. But Paley's watch-finder is not an unenlightened man, but a very peculiar adept; he is skilled in many branches of mechanism. Paley exhibits him impliedly as never having seen a watch, yet knowing all its construction, and that not as an apprentice but as a master artist, for he says that after inspecting it in motion he was satisfied "that if the different parts had been differently shaped from what they are, or placed after any other manner, or in any other order than that in which they are placed, either no motion at all would have been carried on in the machine, or none

which would have answered the use that is now served by it. So much for this original watch-finder, at once ignorant and scientific, who at sight concluded that the watch had a maker; that it was made as it ought to be, on a careful examination of all its parts; and that if made otherwise it would not have gone at all, or gone most imperfectly, a presumptuous conclusion whether made by Paley in his own person or not, and false, for watches may be of very different construction yet keep time with equal accuracy. Thus Paley imagines a case and assumes facts to ground dramatically the superstructure of theology on final causes. This extravagance is not a casual error on some extraneous or auxiliary point, but a primitive, inherent, absolute, elaborate, absurdity, on which his whole argument begins, proceeds, and concludes. Paley then discusses the formation of the eye or eyes, and some of the lower animals have eight; he says, "There is precisely the same proof that the eye was made for vision, as there is that the telescope was made for assisting it; the fact is, they are both instruments." (p. 14.) This argument he discusses in detail. Lord Brougham follows him: "The same induction of facts which leads us to a knowledge of the structure of the eye and its functions on the animal economy, leads us to the knowledge of its adaptation to the properties of light. It is a truth in physics, in the strictest sense of the word, that vision is performed by the eye refracting light and making it converge to

a focus upon the retina. Upon the same evidence which all natural science rests, reposes the knowledge that the eye is an optical instrument. This is a truth common to both physics and theology. Before the days of Sir Isaac Newton, men knew that they saw by means of the eye, that the eye was constructed on principles; but the reasons of its peculiar conformation they knew not, because they were ignorant of the different refrangibility of light: when his discoveries taught this truth it was found to have been acted upon, and consequently known by, the Being * who created the eye. Still our knowledge was imperfect, and it was reserved to Mr. Dollond, to discover another law of nature, the different dispersive powers of different substances, which enabled him to compound an object-glass that more effectually corrected the various refrangibility of the rays. It has been observed that this truth must have been known to the maker of the eye, for upon its basis is that instrument far more perfect than the achromatic glass of Dollond, &c." (p. 30.) But Lord Brougham does not conclude his argument as Paley, who queried, "It may be asked, why should not the Deity have

* It may be thought that Newton countenanced such familiarity of expression, but this is not so. Newton was accused of atheism for a paragraph in his Optics. (Baily's Account of Flamsteed, p. 229.) This probably occasioned the following cautionary quære by Newton in his Optics, and quoted by Lord Brougham: "How came the bodies of animals to be contrived with so much art, and for what end were the several parts? Was the eye contrived without skill in optics, and the ear without knowledge of sound?" (p. 151.)

given to the animal the faculty of vision at once? Why this circuitous perception the ministry of so many means; an element provided for the purpose reflected from opake substances; refracted through apparent ones?" Which Paley answers: "It is only by the display of contrivance that the existence, the agency, the wisdom of the Deity could be testified to his rational creatures. This is the scale by which we ascend to the knowledge of our Creator which we possess, so far as it depends upon the phenomena or the works of nature." (p. 30.) This appears to me, to use all possible temperance in language, passing strange. Lord Brougham brings forward the Deity with Newton and Dollond as opticians of the same school, while Paley affirms that the Deity complicated the means of vision, in order by the display of contrivance to testify to his rational creatures his own ingenuity and wisdom; that is to say, the eye is an elaborate instrument not so much for the service of those who see, but as a means at once mysterious and revealed to improve their belief in Natural Theology*. This is surprising considering who and on what occasion such dogmas are proclaimed. What! to suppose they advance

* S. Turner improves on this extravagance: "I cannot but believe that one of the great purposes of the Deity in creating the insect kingdom was to excite this sentiment (the resurrection) in the human heart, and to raise by it the contemplative mind to look forward to a possible revival from the tomb, as the butterfly from the sepulchral chrysalis." (Creation, &c., p. 458. Fifth edit.)

the doctrine of an overruling Providence, that they exalt that great Cause, universal, immortal, and unchanged, by attributing to him chemical and mechanical speculations in handicraft and technical language! Dugald Stewart said, "When I study the intellectual powers of man in the writings of Hartley, of Priestley, of Darwin, of Tooke, I feel as if I were examining the sorry mechanism that gives motion to a puppet." And if there be any truth in this feeling of Stewart, what must be the sentiments of those who witness authors exhibiting the Deity in their pages as a chamber artizan, composing and compounding eyes, &c. for this very puppet? From the eye Paley proceeds to other parts of the body, then to birds. The following exposes the difficulty of procuring examples, though now all natural history is employed as votive offerings for this purpose, to extend the dominion of final causes. Paley says, "In the small order of birds which winter with us, from the snipe downwards, let the external colour of the feathers be what it will, their creator has universally given them a bed of black down next their bodies. Black we know is the warmest colour, and the purpose here is to keep in the heat arising from the heart and the circulation of the blood. It is further likewise remarkable, that this is not found in large birds; for which there is also a reason: small birds are much more exposed to the cold than large ones, forasmuch as they present in proportion to their bulks a much larger surface to the

air." (p. 173.) If black be the warmest colour, why in Norway, as Mr. Clarke says, do the people prefer white kine for their hardihood? And again, if Paley be orthodox, nature mistakes when some animals brown in summer, change in hyperborean regions on the approach of winter their dark hair for grey. So much by innuendo on colours and final causes! But why does Paley resort to England as the region where nature especially exhibits her ingenuity by lining the feathers of small birds with black down? Beckford in his Excursion in Portugal mentions (p. 160.) a lady bird-fancier who decided that England had no native birds because the country was too cold; and a Jesuit, probably the confessor, who was of the company confirmed the lady's observation by quoting the indisputable authority of Camoens:

> A Grande Inglaterra, che de neve
> Boreal sempre abunda.

But setting all this aside as surplusage, why did Paley specify snipes on this occasion? Snipes are not peculiar to England, nor even to Europe; on the contrary, to use the words of the Scotch Encyclopedia, "they are universal birds, in every quarter of the globe and in all climates." After birds, Paley exercises his ingenuity in working out the doctrine of final causes on fishes. One instance deserves a passing remark: "The shell of a lobster's tail in its articulation and overlappings represents the jointed part of a coat of mail, or rather, which I believe to be the truth, a coat of

mail is in imitation * of a lobster's shell." (p. 267.) The lobster's tail is a final cause certainly, but here it is cause upon cause, or, as the lawyers say, cause and cross cause. As Paley drew a final cause from the black inside down of small birds, he draws a final cause from the inside lining of large quadrupeds: "Another perfection of the animal mass is the *package*, I know nothing which is so surprising. Examine the contents of the trunk of any large animal." &c. p. 149. Paley also professes to explain by final causes famines, blights, &c.: he says, "What we call famines and blights are oftentimes legions of animated beings claiming their portions in the bounty of nature. What corrupts the produce of the earth to us prepares it for them, and it is by means of their rapid multiplication that they may take possession of their pasture; a slow propagation would not meet the opportunity." (p. 374.) Then Paley is at issue with uncle Toby; that the world is large enough for you and me he denies; and the final cause obtrudes adversely, for Paley holds that man

* The following is still more pleasant of the *genus imitabile* man. D. Hildredth says the cicadæ or locusts of North America, "Make a great noise and screaming with their air-bladders or bagpipes. These bags are placed under, and rather behind, the wings in the axilla, something in the manner of using the bagpipes with the bags under the arms. I could compare them to nothing else; and, indeed, I suspect the first inventor of the instrument borrowed his ideas from some insect of this kind. They play a variety of notes and sounds, one of which nearly imitates the scream of the tree toad." This I quote from *Brewster's Natural Magic.*

should perish in order that legions of flies and vermin should enjoy the bounty of nature. Paley is often homely, but expressive in his language, as about the *package* in the trunk which I have mentioned; he also deals sometimes too fervently in the reality; while in the following illustration there is something of pastoral gallantry, which brings flirtation within the vortex of final causes. He writes: "The glowworm is a female caterpillar, the male of which is a fly, lively, comparatively small, dissimilar to the female in appearance; probably also distinguished from her in habits, pursuits and manners, as he is unlike in form and external construction. Here then is the adversity of the case. The caterpillar cannot meet her companion in the air, the winged rover disdains the ground. They might therefore never be brought together, did not this radiant torch direct the volatile mate to his sedentary female. In this example we also see the resources of art anticipated. One grand operation of chemistry is the making of phosphorus: and it was thought an ingenious device to make phosphoric matches supply the place of lighted tapers; now this very thing is done in the body of the glowworm." (p. 263.) Excellent archdeacon; —so the glowworm is the quasi inventor of this phosphorus, and it originated with the gallantry of life and love and final causes! Lord Brougham, true to his text, does not forget the glowworm, though he does not display it with all the radiance, and as the poet Thomson would say, the effusive

force of his predecessor. He says: "Thus it is pleasing to find that the properties of two curves so exceedingly unlike as the ellipse and hyperbola closely resemble each other, or that appearances so dissimilar as the motion of the moon and the fall of an apple from the tree are different forms of the same fact; it affords a pleasure of the same kind to discover that the light of the glow-worm and the song of the nightingale are both provisions of nature for the same end of attracting the animal's mate and continuing its kind." (p. 183.) Thus Lord Brougham adds to the glowing lady a companion piece of the serenading gentleman. On this interesting topic of final causes in defence of Natural Theology might be added with equal propriety the courtship in the owling time of night of the death-watch. The noise made by the male, the terror of many midnight listeners, is the "Come hither" to his coy sweetheart; and, strange to say, he effects this love-note by knocking his forehead against the timber in the chamber, the bed-post, or window-shutter: hence, of course, the caveat *Fronti nulla fides* is referable to the unrequited love of the female death-watch. Paley among his final causes considers night as kindly provided for the sleep of animals: he says, "The last relation of this kind which I shall mention is that of sleep to night, and it appears to me to be a relation which was expressly intended. Two points are manifested: first, that the animal frame requires sleep; secondly, that night brings with it a silence and a cessation of activity which allows of sleep being taken

without interruption and without loss." (p. 232.) *Oh, day and night, but this is wondrous strange!* But could not eyes close when disposed to sleep without the curtain of the night being drawn? Do not many animals, and man among the rest, sleep throughout the day; and do not some awake as the sun declines, and enjoy all their faculties and activity at midnight? To suppose that the fixed sun * and the revolving earth regarded sleeping and waking animals is as probable as that night and day typified the sport of hide and seek among children. After this we need not be surprised that Paley considered astronomy † as

* Dr. Gisborne in his Natural Theology was chagrined at the liberality of Paley. The Quarterly Review (No. 41. p. 49.) reflects properly on Gisborne's allusion to the days of the creation, saying, "He would satisfy himself in dismissing, though with reverential awe, the account, merely in compliance with popular ideas which represent the sun as a kind of secondary to the earth, and subservient along with the moon, its companion or even equal, to the uses of the globe we inhabit." Let the Reviewer not be sure of that; many uphold that the sun and moon move round the earth. There are conservatives in astronomy as in politics. By an advertisement in the London journals it appears that Mr. Finlayson has published a work, *with plates*, in which he disproves *the false and fabricated solar system of Sir Isaac Newton*, showing that the sun, moon, and stars move round the earth; and he further proves that the ten tribes are to be restored in 1836. This is the sixth edition of the work in a few years. Newton's Principia did not come to a second till thirty years after the issue of the first. What Euler said of Newton and the English still continues; his discoveries were received by all but his countrymen: *Missis igitur quorundam Anglorum.*

† He says that astronomy is not the best medium to prove the agency of an intelligent Creator. (p. 267.) Aristotle thought otherwise. Cicero quotes the passage in *de Natura Deorum*, from a lost work of Aristotle.

rather unsuitable to afford proofs in favour of theology.

Paley professes to have felt no difficulty in accounting for all natural incidents by final causes, with the exception of the mammæ of male animals. He says, " I confess myself wholly at a loss to guess at a reason either final or efficient for this part of the animal frame, unless there be some foundation for an opinion, of which I draw the hint from a paper of Sir Everard Home, that the mammæ of the fœtus may be fixed before the sex is determined." (p. 340.) But why might they not be intended to enable males to suckle the young in case of necessity, for such has occurred? Humboldt relates in his American travels, and it is also repeated in a digest of them in the Cabinet Library, that on the death of a mother, the father took the babe to bed, and suckled it, and that the child was reared by this means. Such are the leading points of the lauded and popular treatise of Paley: he explains and specifies the purposes, means, and consummation of the Deity's will in all things presented to our senses; he is positive respecting the objects and designs of the great Cause, universal and unchanged; yet Paley is not positive respecting circumstances immediately connected with mankind, and he not only hesitates, but professes ignorance of the cause of some of the enjoyments of his fellow men, and even of the causes of his own repeated pleasures and pursuits. He says, " We can give no account whatever of our pleasure

in the simple and original perception; and even when physical sensations are assumed we can seldom account for them in the secondary and complicated shapes in which they take the name of diversions. I never yet met with a sportsman who could tell me in what the sport consisted; who could resolve it into its principle, and state that principle. I have been a great follower of fishing myself, and in its cheerful solitude have passed some of the happiest hours of a sufficiently happy life; but to this moment I could never trace out the source of the pleasure which it afforded me." (p. 383.)

Paley's Natural Theology being disposed of, I recur to Lord Brougham's Essay on the same subject. He proposes, as I have stated, to add to Paley's work an illustrative commentary, which he states has been for some time in forwardness. In the tract now to be considered he repeats many of Paley's examples, and throughout adopts, as I have also stated, his reference to final causes; for example, and I quote his words: "When a bird's egg is examined, it is found to consist of three parts, the chick, the yolk in which the chick is placed, and the white in which the yolk swims; the yolk is lighter than the white, and it is attached to it at two points, joined by a line, or rather plane, below the centre of gravity of the yolk. From this arrangement it must follow that the chick is always uppermost roll the egg how you will, consequently the chick is always kept nearest the breast or belly of the mother while she

is sitting." Now, supposing that eggs on being rolled take that position, it does not follow that eggs, after frequent disturbance by the hen's feet and bill in the nest, must in that concave receptacle always present the chick side uppermost. The upset of the eggs by the hen is so frequent, that henwives say that the mother anxiously turns the eggs in order that every part of each egg may receive its due portion of the warmth of her body. The fallacy of Lord Brougham's assertion may be proved, by the curious in hatching, by marking with a pencil the upper surface of the eggs in a nest, and noticing if, on successive days, the same marks retain the same position. Lord Brougham concludes the paragraph by saying, "This leads by a single step to another truth in Natural Theology, that the egg must have been formed by some hand skilful in mechanism, and acting under the knowledge of dynamics." (p. 34.) To introduce the Deity disposing a chick in an egg that it may be more easily hatched, marvellously offends the *nec Deus intersit*: and then Lord Brougham referring to the Deity's hand directed by his skill in dynamics! Such language is beneath a pagan's application to one of the *dii minores*. Lord Brougham seems to exceed the authors of the Bridgewater treatises in the detail of his references; he descants on the knee-pan, on the elastic cushion of the ostrich, on the web-feet of the water-fowl, on the flexor tendon of the duck, &c., on all of which he concludes: "These are facts

learnt by induction; the inductive science of dynamics shows us that such mechanism is calculated to answer the end which, in point of fact, is attained. To conclude from thence that the mechanist contrived the means with the intention of producing the end with the knowledge of the science is also strictly an inference of induction." (p. 37.) Thus the Deity is called a mechanist—learned in optics, in projectiles, in dynamics, &c.; and he draws the conclusion, that because animals act so and so, they were purposely made to act so from some preconceived type. I do not deny this; it may be so; yet here I cannot refrain from quoting a cautious remark of Paley: "To this great variety in organized life the Deity has given, or perhaps there arises out of it, a corresponding variety of animal appetites." (Natural Theology, p. 270, c. 19.) Before I proceed further, and perhaps I should have before stated, that those who would regulate all things by final causes assume that the world and all that it contains was made in time, or, to use the common expression, was created. Creation, according to some, implied an arrangement of chaos; others use the term as originating the world from nothing. Barrow would prove that, according to Scripture, God made the world out of nothing (Sermon, xii. v. 2.); and South asserts that it is as suitable to our natural notions to conceive the world produced from nothing, and *de novo*, as to conceive the world to have had a beginning. (Sermons,

vol. i. p. 46.) It may be so; all inconceivables are superlative; but if it be so the statement requires us, according to our natural notions, not to conclude but to remain undecided. To prove a creation many very odd fancies have been propagated, and even by men of the rarest genius, as Leibnitz, who imagined that he saw in the binary arithmetic the image of the creation, which he communicated to the jesuit Grimaldi, President of the Tribunal of Mathematics in China, in hopes that this emblem of the creation would convert the emperor to Christianity, because he was passionately fond of mathematics. Some presume to name the year and day of the creation; the Hindoos assert that the world began on a Sunday at sunrise, and they add that the Deluge began on a Friday. (Colebrook's Sanscrit; Algebra, p. 44.) I do not say that the world was not created and had not a beginning, but there are no proofs that the world was not, or that it was made in time; neither do I say that plants and animals, &c. have not been created, or that there have not been successive creations; indeed, conjecturally, we might conclude from geological discoveries, that after great periods or cycles new plants and animals sprang into being: monkeys* and men seem to have been an

* Cuvier says, "It is wonderful that, among all these mammifera, of which, at the present day, the greater part have a congerminate species in the warm climates, there has not been one quadrumanous animal, not a single bone or a single tooth of a monkey, not even a bone or a tooth of an extinct species of this animal. Neither are there any remains

after production; though man, by a sort of borough-English in nature, though last-born of animals, enjoys the primogenitureship of the earth. Yet there is no actual proof of originating any organized beings, and the lowest vegetable is in this respect as prerogative as the most exalted animal. Ray spoke loosely of a seminal tincture in the earth; but lichens and mosses, and the green things that mantle on the pool, and smear our walls like blots on unsized paper, grow from seed or sets as certainly as the monsters of the forest or the plain, the Indian fig-tree, the baobob, the dragon-tree, and the largest of all, the *Cupressus* disticha.* Every germ has had an ancestor, and the ephemera and the infusoriæ have pedigrees as long as the elephant and hippopotamus. So, likewise, all things change and are transformed, not merely as the grub to the chrysalis and fly, but as varying their form, particularly in the early stages of their development. Then, again, as all things dissolve, they reassemble their disbanded atoms which are corrupted and putrefied; even the air, the breath of the world, becomes infectious, while it is again ventilated and refreshed by itself, and becomes the medium of vigorous life. Throughout nature death is but

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of man. (On the Surface of the Globe, p. 224.) It may be stated here that in Malabar they say monkeys were men, but on account of their laziness tails were given them. (Dr. Fryer-Forbes, Oriental Memoirs.)

* Humboldt mentions one 76 feet in circumference, and another 118 feet in South America.

a pause, a relay in the everlasting journey, never ending, still beginning; that which dies revives, and thence under this persuasion the Jews utter no contradiction in calling the burial place "the house of the living." The belief that the world, earth, planets, sun, stars were made in time, arises from the common vanity of man, "who is of few days." Man was born, therefore the earth was once in swaddling-clothes; yet, though man was born of parents, nature affords no coincident genealogy of worlds. But man makes himself the measure and the height of all things; the earth and heavens were formed for him; the earth was convulsed for his convenience; and some affirm that vegetables were sunk 190 fathoms, perhaps far deeper, and were converted into coal, in anticipation of his want of fuel. Hence he is the object of rain and dry weather, of storms and earthquakes,—opiate visions, holiday musings; he is the drift and purpose of all the casualties and courses in air, earth, and water, whether enjoying good or suffering evil. When Brindley replied to a question, For what purpose were rivers formed? he replied, "To feed navigable canals:" and in this answer he only exceeded the common staple of human vanity by adding to man's self-sufficiency the impertinence of the engineer. Hence the notion of spirits being busy about man, for his conceit fills the world with flimsy beings; dæmons flutter in the atmosphere, and labour beneath the earth. Agricola in his book *De*

Animalibus Subterraneis, talks of spirits counterworking miners. These are only a small department of the subterraneous malignants who torment mankind. The earth abounds with these ministering agents, and some vouch for their activity. Baxter, in his book on the Soul, affirms that dreams are prompted by separate immaterial beings; and Gregory in his Life of Hall, p. 80, says "he defends this theory with much ingenuity." Yet a still greater egotism than peopling the earth and air with dæmons was the opinion not long since generally entertained, that the configuration* of the stars at the birth of babes ruled their future destinies, and that comets and eclipses portended confusion to kings and nations. Yet greater, far greater than all these mortal absurdities is or was the opinion that the moon, planets, sun, stars, and the whole host of heaven were moulded and launched into space to adorn the earth, because it is man's abode. What is man when the earth itself is, as Laplace says, "qu'un point insensible dans l'immensité de l'espace"? (Méchanique Céleste, t. ii. p. 598.) Why, the comets alone which visit the planetary orbits are conjectured by Monsieur Arago to amount to seven millions. Then, how various! how prolonged in their courses! Some

* Tutti nascono sottoposti ai segni
Che si chiamono quà giù corpi celesti.
Boyardo, Orlando Innamorato, c. 2.

Bodin mentions an exception: "Car tous les astrologues mêmes demeurent d'accord, que les sages ne sont point sujets aux astres." (De la République, liv. iv. p. 449.)

employ a few years; others, as those which appeared in 1680, 1763, 1811, are calculated to require 515 years, 3383 years, 7334 years, to complete the periods of their respective return. Of the stars, they are classed under sixteen degrees of brightness. Herschel says they "are infinite in the only sense in which we can assign a meaning to the word." (p. 377.) The milky way alone, he says, consists of stars, scattered by millions. (p. 163.) Then their distance; the nearest must be at least forty millions of miles from our system, while the furthest exceeds all calculation. Some of them already discovered by glasses (and every improvement in the telescope exhibits new stars,) would require a thousand years to transmit their light to the earth. Though the sun's light reaches the earth in seven or eight minutes, but the stars referred to would require a thousand years to transmit their light to the earth; and Huygens carries the distance of some stars much further, conjecturing that these would require six thousand years to produce the same effect. I affirm nothing: the world may have been created, may have been made in time, even a short time ago, and may be soon destroyed*; but I state there are philosophically no facts to induce any such conclusion, and to use the emphatic words of the greatest mathematician of

* Latimer said, "For the world was ordained of God to endure as Scripture, and all learned men agree six thousand years." (Sermon, Day of Judgement, p. 261.)

modern times, "there is no intimation that the world had a beginning, nor any prospect that it shall have an end."

Those who argue on final causes, as I have said repeatedly, refer all things directly or indirectly to man; he is the text, the commentary, and the interpreter; in consequence, they talk of the personality of the Deity, and none is more positive in this assumption than Paley and Lord Brougham. Paley is very particular; he says personality relates to a person, a person is an individual, and that God is infinite in essence and powers. (p. 321.) Those who represented God under a human form were vain and ignorant, though not contradictory; but to talk of an infinite person or individual, individual implying outline and insulation, associates antagonist terms. Here again man's brooding vanity interferes with his reasoning: having assumed the Deity's motives and objects in the formation of animals, and the dependency and motions of the heavenly bodies, because such are agreeable to his notions, he insists that God is a person, because he cannot apprehend how faculties concurring, though vastly superior, with man's can subsist, unless in a person, an individual. Some writers on religious affairs have actually identified God and man. Dr. Clarke said "that the relations, respects, and proportions of things are just as they appear to our understanding." Hence those who assume a similar intellect between God and man add a further resemblance,

and as man is a person, the personality of the Deity follows of course. In the religious mysteries they represented God with a gilt face. Happy and respectful would it be if the moderns had the discretion of the philosophers in the benighted period of paganism, as Euclid, who being asked what were the Gods, and in what they rejoiced, answered, "This only I know with certainty, that they hate the inquisitive*." I pass over what Lord Brougham says of *à priori* reasoning; and I come to that portion of his discourse which regards the soul, or mind, terms used indifferently by him. In this part of the disquisition he claims the merit of novelty, for he says, "Nothing is more remarkable than the care with which all writers upon this subject, (Natural Theology,) at least among the moderns, have confined themselves to the proofs afforded by the visible and sensible works of nature, while the evidence furnished by the mind and its operations has been wholly neglected. The celebrated book of Ray on the wonders of the creation seems to assume that the human soul has no separate existence, that it forms no part of the created system." (p. 52.) He also specifies Paley in this rebuke, remarking that he never mentions the mind, nor any of the intellectual phænomena (p. 53.); adding, "Thus all these authors view the revolu-

* Τα μεν αλλα ουχ' οιδα τοις μεν τοι φιλοπραγμονας οτι μισουσι ασφαλως οιδα.

tion of the heavenly* bodies, the structure of animals, the organization of plants, and the various operations of the material world which we see carried on around us as indicating the existence of design and leading to a knowledge of the creation, but they pass over in silence, unaccountably enough, by far the most singular work of divine wisdom and power—the mind." (p. 54.) This he calls, *unaccountable*, though he accounts for it by saying, "Their habits of thinking led them to consider matter as the only certain existence, as that which composed the universe, as alone forming the subject of our contemplation, as furnishing the only materials of our inquiries whether respecting structure or habits and operation. They had no firm, definite, precise idea of any other existence respecting which they could reason or speculate." (p. 55.) Thus accounting explicitly for what he calls an unaccountable omission: and many will concur in the propriety of their reserve. Yet it appears that as they in their apprehension avoided to discuss the mind, Lord Brougham met the question with chivalrous dogmatism, for what can be asserted more positively and authoritatively than that "the evidence of the existence of mind

* We may say in opposition that it is strange Lord Brougham has neglected astronomy in this part of his subject, of which Laplace says truly, "L'astronomie par la dignité de son objet et la perfection de ses theories, est le plus beau monument de l'esprit humain le titre le plus noble de son intelligence." (Laplace, Mechanique Celeste, t. ii. p 398)

is to the full as complete as that upon which we believe in the existence of matter. Indeed it is more certain and more irrefragable?" (p. 56.) Adding, "of the two existences, then, that of the mind as independent of matter is more certain than that of matter apart of mind;" (p. 57.) that is, matter is less certain than immateriality. This rivals the extravagance of the Vedanti school, and the verbiage of Bishop Berkeley's sophistry. Lord Brougham proceeds in the same strain: at page 110 he enounces beyond his own superlative dogmatism,—thus "it may be further observed that the material world affords no example of creation any more than of annihilation. (True.) Such as it was in point of quantity since its existence began, such it still is, not a single particle of matter having been either added to it or taken from it. (Very true.) Change, unceasing change of all its parts at every instant of time it is for ever undergoing, but though the combinations or relations of these parts are unremittingly varying, there has not been a single one of them created, or a single one destroyed. (Very true.) Of mind this cannot be said; it is called into existence perpetually before our eyes. In one respect this may weaken the argument for the continued existence of the soul, because it may lead to the conclusion, that as we see mind created, so it may be destroyed, while matter, which suffers no addition, is liable to no loss." First, observe how loose is his language; he uses synonymously *mind called into existence*

before our eyes and *mind created*: they are not identical expressions; to be born is to be called into existence, but this is not creation. And how can children who are not created have created minds? Then what does he mean by *the mind called into existence before our eyes*? There is no such display of instant illumination; the human intellect grows like other faculties and powers; man in the beginning of his existence is not mentally or bodily more, but less favoured than many other beings. The organs of all animals do not coexist simultaneously in the germ of life, but are successively formed, and often of parts which gradually coalesce and in time become fully developed. Besides, the human embryo endures various metamorphoses; at one period it possesses branchiæ similar to the cartilaginous fishes, a heart with a single set of cavities, a brain of a longitudinal series of tubercles; then it changes the branchiæ for lungs, while the circulation is single as that of reptiles. What can Lord Brougham mean by the soul created before our eyes? Not in the embryo, which is at first an atom* and then after preparatory changes assumes the figure of a reptile, a fish, a quadruped with a caudal prolongation of the sacrum. Nor does this nine months' wonder when disclosed into

* Roget says truly, "Every individual, vegetable and animal takes its rise from an atom of imperceptible minuteness, and gradually increases in bulk by successive accretions of new matter derived from foreign sources, and by some refined but unknown processes transmuted into its substance." (vol. i. p. 17.)

this breathing world, and when it notifies life legally by crying, exhibit a soul *created before our eyes*; the child from the womb does not at all resemble Minerva when she sprung from the parental head of Jupiter in panoply all-armed. No, for days and nights the infant dozes insensible; then sucks and sleeps, or in moping vicissitude sleeps and sucks; it is scarcely animate, and of all beings of the higher classes few to whom the enjoyment of intellect is so long delayed, none reaches it with more struggling advances. Yet to talk of mind being created or brought into existence before our eyes, intimates something common to vulgarity, and instant as gas inflamed, or at least as the agony of action communicated by the galvanic pile to the extinct being. As the body is confirmed by time and nurture the mind strengthens, and as the senses act and aid each other, the mind exhibits greater activity and resources. Lord Brougham insists that the mind is immaterial and eternal, and eternal because immaterial. Opinions respecting the mind or soul have been various; a few of them may here be mentioned preparatory to resuming the validity of Lord Brougham's argument. Many among the pagans believed or reasoned that souls were eternal *à parte ante*, (Plato Meno, Opera Omnia, p. 415.) and it seems to have been Plato's own opinion (de Legibus, lib. x. p. 949). Socrates considered that souls were immortal, and that they had often been born. Then as to the existence of mind or soul: Orpheus said it was lymph, εστιν

ὑδαρ ψυκη, and death the alteration of it, θανατος δ' ὑδεσσιν αμοι Βη. (Clement, Strom. lib. vi. p. 624.) Empedocles said that the soul subsists in the blood, ψυχη εν τη του αἱματος συστασει. (Plutarchus περι των αρεσκοντων τοις φιλοσοφοις, lib. iv. p. 222.) The Jews considered the blood the life, and hence spilling man's blood (Gen. ix. 5.) signified homicide. Zenophanes called the soul πνευμα. (Diog. Laertius, p. 640.) And in Genesis it is said the breath of life was breathed into Adam. At present suspended animation is sometimes restored by inflating the lungs with the natural breath. *Anima* signified breath, life, mind, soul. Others have had very different notions of the mind: La Metherie supposed the mind was composed of a fine species of crystals; and Fearn that it is of definite shape; *to wit*, "a flexible spherule." (p. 293.) Dr. Okeley held that the material of souls was caloric. Then respecting the position of the soul: Lucretius considered the heart to be the residence of the soul; so do the people in the Tonga Islands according to Mariner (vol. ii. p. 121.); and Descartes fixed on the pineal gland. Supposing the nature of the soul to be ascertained, and its locality in man, other questions arise, as how it got into the body and became domiciliated. Pythagoras, Anaxagoras, Plato, Zenocrates, Cleanthes thought it was inserted from without, θυρα θεν εις χρινεσθαι τον νουν. (Apud Stobæum, Ecc. Phys., lib. i. p. 93.)

This insertion of the soul into the body according to some was effected in the embryo state: "Ani-

mas aiunt cabalistæ sive singulares, sive e massa, ut loquuntur, ideali educendas innumeras semper existere, atque ex hisce in corpore humano seu embryones immissis fieri humanes." (Selden de J. N. et Gentium, lib. ii. c. 4. p. 163.) So in the Zendavesta it is written, " Lorsque le corps de l'homme est formé dans le ventre de la mère l'ame qui vient du ciel s'y etablit. (tom. ii. p. 384.) Supposing body and soul different and distinct at any time, whence were the souls derived? In Pinkerton's collection of Travels (vol. ix. p. 730.) it is supposed that children in the womb were animated with the souls or minds of those who died before they had attained the age of reason. Yet this only pretends to explain the employment of souls at second-hand, for the original stock and trade are unaccounted for by it. Men have not only contested with one another what the soul is and is not, but some have asserted its duality, its trinity, and even its further complexity. Aristotle considered that the soul was composed of a rational and irrational nature. (Ethic. ad End. t. ii. p. 242. Opera.) Plutarch affirmed that the soul is double (Moralia, p. 371), perhaps as Coleridge talked and speculated on an inner sense of the mind. (Table Talk, v. 2. p. 36.) Whether Coleridge considered this inner sense a quality, or an *ens* according to German verbiage, is not very clear. Many of the Rabbins supposed men had three souls; Monboddo added a fourth, and all immaterial souls. Some reputed the soul a harmony of the five senses. (Plutarch, Moral. p. 223.) St. Pierre was not

(Philosophy of Nature) disposed to advance beyond the last quotation of five souls; yet had he been skilled in anatomy and not horror-struck at materialism he might have admitted a sixth soul, for the brain consists of a congeries or labyrinth of medullary fibres which are continuous with the six columns of the spinal marrow. The Stoics considered the soul to be constituted of eight parts, οκτω ταμερη την ψυχην δεντες. (Ap. Stobæum, Eulog. Phy. p. 103.)* But they mixed up the five senses, the voice, the generative faculty, and the understanding as constituting the mind. Yet in all ages some have been reserved on this subject. Sextus Empiricus said it was incomprehensible, and he drew an argument for this conclusion from the endless controversies on the subject. (De Pyr. Hyp. lib. ii. c. 5. p. 57.) † But not so Lord Brougham, who has added to the controversialists; he declares, as I have repeated, that souls are perpetually *created before our eyes*, though the origin, progress, development of the mind concur with the growth and strength of the body. He also insists, as I have said, strenuously for "the immateriality of the soul;" and he begins his reasoning on this point by what he calls *a psychological argument respecting the Deity's design* ‡

* Plutarch has the same: οἱ Στωϊκοι εξ οκτω μερων φασι συνεστανει, κ τ. αλλα. (Moralia, p. 222.)

† Bishop Watson acknowledged that he knew no more of the soul in his old age than in his infancy.

‡ The Deity's design! Buffon says generally, "Nous trouverons qu'en cela, comme en tout, le plan de la nature est bien différent du canevas de nos idées." (tom. iii. p. 29.)

drawn from the nature of the mind, asserting "that the immateriality of the soul is the foundation of all the doctrines relating to its future state." (p. 100.) The question of materiality or immateriality is one topic, mortality or immortality another. To affirm that on the immateriality of the soul the whole foundation of its immortality rests is unadvised in every sense. Many believe in the immortality of the soul who never heard of its immateriality. Bruce says: "I never heard a savage who separated the belief of a future state from the immortality of the body." (Travels, vol. ii. p. 406.) The burying of arms, dogs, &c. with the dead implies the same, according to the well-known couplet:

> But thinks, admitted to that equal sky,
> His faithful dog shall bear him company.

The Mahometans are altogether bodily in their notions of an hereafter, &c. Lord Brougham continues, "If it consists of material parts, or if it consists of any modification of matter, or if it is inseparably connected with any combination of material elements, we have no reason whatever for believing that it can survive the existence of the physical part of our frame; on the contrary, its destruction seems to follow, as a necessary consequence, the dissolution of the body." This is an argument *in terrorem* to the immortals. Believe, says Lord Brougham, as I teach, the immateriality of the soul, otherwise you must renounce the chance of a future life; for if the soul be material you must die soul and body, without the possibility of a resurrection. He adds with complacency, "Hap-

pily, however, the doctrines of materialism rest upon no solid foundations either of reason or experience; the vague indistinct form of the proposition in which they are conveyed affords one strong argument against their truth." (p. 102.) Yet Lord Brougham, thus charging others with being vague and indistinct, is himself so loose that all who have critically noticed his tract, whether they concur in his opinion or not, have remarked this blemish. He seldom defines his terms; uses, as I have stated, indifferently soul and mind, which I have followed, concluding that he considers them identical; and finally, he talks of the immateriality of the soul in material * language. Is the word immateriality direct or distinct? What can be more indistinct? Immateriality is nothingness in regard to substance. Nothing is not perceived or perceivable. Now Hobbes said, "Knowledge which we call science, I define to be the evidence of truth from some beginning or principle of sense." (Human Nature, p. 63.) But immateriality has no beginning or principle of sense. To talk of the mind and its immateriality is recurring to occult qualities and innate ideas; though I suspect Lord Brougham confounds thinking with the course of thought. To insist that thinking cannot be the result of material agencies seems to me marvellously pre-

* Thus: "The changes which the mind undergoes in its activity, its capacity, its mode of operation, are matter (matter) of constant observation, indeed of every man's experience. Its essence is the same, its fundamental nature is unalterable, it never loses the distinguishing peculiarities which separate it from matter." (p. 119.)

sumptuous. Objects are material, our senses are material; these communicate inwardly by material nerves with a material brain: this exceeds our apprehension; but does talking of an immaterial mind charm the difficulty? To affirm that the thinking principle must be immaterial assumes much more than that all the properties of matter are known to the advocates of immateriality. What do they know of matter? Essentially nothing; yet still they know more than enough to awe human assurance in putting bounds to its capacity. Life is a modification of matter more accessible than mind to the cognizance of mind. Yet what is life? Abernethy conjectured that it was something analogous to the electric fluid: it may be so, yet this is material. But those who admit objects to be material, and the senses material, and the sensorium material also, and yet assert that that which apprehends by the means of these materials must be immaterial itself, seem to me to originate and multiply difficulties when they propose to elude them; they evidently speak without facts, if not apparently in opposition to them; for how can corporeal agents act on incorporeals? It may be so; but to say it must be so, and that because they so dogmatize, they must be believed, equals any outrage ever perpetrated by priest or fanatic against both man and nature. Such assertions are far remote from the confines of philosophy. Would not doubting on the subject be more becoming than dogmatism? Yet Lord Brougham

is peremptory; he will admit neither pause nor compromise. Mind he insists cannot be material simply or by combination, and this he avers, not for the credit of mind, but for the credit of man, though mind is not peculiar to man, but shared with all animals except the lowest. The notion, advocated principally by Descartes, that all animals except man are mere machines, has been long exploded. The tenants of earth, air, and water of various kinds are fond parents; many associate and cooperate for a common purpose, exhibiting reasoning, great memory, providence, ingenuity in averting accidents and constancy in overcoming them. These faculties are more early developed in them than in man; and for speed, strength of body, and in the acuteness and power of all their senses, many far exceed the human race. But they fail in the hand and the tongue, and in the after means of memorialing their experience. Thus other animals cannot exceed "the wisdom of their ancestors;" generation follows generation without any great increase of knowledge to the succeeding. But man's experience, with few exceptions, survives his decease, and this proceeds accumulating, till those in succeeding ages may be said to have lived through all bygone time. I speak of civilized man, for savages profit little by their predecessors. They have small means of storing or transmitting their knowledge, and in this respect they are little superior to their fellow-foresters, who together fall back into the wilds and

woods, and perish together. If mind be immaterial* and therefore immortal, as is inferred, so the minds of all thinking animals are immortal; for though the minds of men vary from those of other animals in degree, they do not differ from them in kind. Leading characteristics are common to both, and why should not the result correspond? Hence it has happened that while some have attempted to escape the necessary conclusion, as Butler in his Analogy, &c., others, and those not the least strenuous for the immortality of the soul of man, have extended an after being to the souls of brutes, as Dr. Hartley, who says, "the future existence of brutes cannot be disproved, and that he expects and hopes they will be our brothers and sisters in the higher sense in immortality." The Rev. R. Dean also argued that they will be finally delivered at the general restoration of mankind. These opinions, however extravagant to many, follow of course. An atom is as much matter as a world of atoms, and a short process of thinking implies mind as much as an elaborate one. If mind be

* And why, on the same argument, should not plants enjoy a futurity? "Life I would therefore assume to be a principle in vegetation, distinct from its material substance, and additional to it." (Sharon Turner, p. 512.)

This accords with Empedocles, and Plato taught that plants have a soul.

Yet are all these outdone. "The Fiji's doctrine with abundant liberality extends it [immortality of the soul] to all mankind, to all brute animals, to all vegetables, and even to stones and mineral substances." (Mariner's Tonga Islands, vol. ii. p. 122.)

immaterial and immortal in one case, it is immaterial and immortal in the other, and the premises of such reasoners lead inevitably to this conclusion. Yet what is gained for or against the popular notion of the immortality of the soul, or mind, by supposing it material or immaterial? Whatever exists will exist, let the verbalist dogmatize till doomsday. Assuming the soul to be material, concurs with everything connected with it—object, sense, sensorium, brain, &c.; but asserting that it is immaterial only adds a delicate Ariel to Prospero and his divining rod, exposing a phantom in vacuo, which, instead of fixing the enchantment, dissipates the abstraction. Lord Brougham, however, dogmatizes on this point immeasurably; he says, "The evidence which we have of the existence of the mind is complete in itself, and wholly independent of the qualities or existence of matter;" adding, "It is not only as strong and conclusive as the evidence which makes us believe in the existence of matter*, but more strong and more conclusive." (p. 104.) And having pursued a series of gratuitous assertions, he tops the climax by affirming, "We have therefore evidence of the strictest kind, induction of facts the most precise and unerring, to justify the conclusion, that the mind exists and is different from and independent of matter alto-

* The following couplet would have suited this *voluntary*:

"For of the soul the body form doth take,
For soul is form and doth the body make."

gether." Why? Who ever had cognisance of minds without bodies? He says, "If the mind perishes or ceases to exist at death, it is the only example of annihilation." (p. 107.) Who talks of annihilation? He subjoins, "It may be said, why should it not, like the body, be changed, or dissipated, or resolved into its elements? The answer is plain, it differs from the body in this, that it has no parts, it is absolutely one and simple, therefore it is incapable of resolution or dissolution." (p. 108.) Whence the proof of its being one and simple? The mind possesses various powers and faculties; these do not favour the oneness of the mind. But how monstrous to dogmatize that the *mind exists, and is independent of matter altogether*! Can there be mind where there are no subjects for the operation of sense; or could mind exist without the senses, which are material? Deduct a sense and so much is withdrawn from the capability of the mind; it is halt or extinct to the amount of the sense impaired or obliterated. When the sense had been enjoyed and lost, the mind suffers, and its impressions from recollection wear away, while on the senses being restored, the mind expands, but not suddenly. The blind boy Mitchel* used

* "To the sense of smell, he seemed chiefly indebted for his knowledge of different persons." (Monthly Review, Dec. 1813, p. 368.) And on smelling a person, he determined whether he wished to know a stranger or not. (p. 369.) After obtaining his sight, he depended little to the information given by his eye, and always turned away his head, while he carefully examined, by his sense of touch, the whole surfaces of the body presented to him." (Ibid. p. 370.)

the sense of smelling for seeing, and on being restored to sight, continued occasionally to employ his older sense in preference, or in conjunction with his new born vision. Lord Brougham, not satisfied with that topping unruly assertion that mind is wholly independent of matter, resorts to dreaming (his own dreams, it would appear,) for facts in support of his assertion. The immateriality of the soul (ever honoured be Queen Mab's witchery) proved by dreaming!! He continues, "A multitude of facts, chiefly drawn from and connected with the phenomena of dreams, throw a strong light upon the subject, and seem to demonstrate the possible disconnexion of mind and matter." (p. 111.) Such words, and in juxtaposition! *dreams—throw a light—seem to demonstrate—a possible disconnexion of mind and matter.* "Dreams throw a light" is a figure of speech which even the new theory, that light is not substantial but vibratory, will hardly authorize; and then to couple *seem* and *possible* with *demonstrate* is to associate the strongest and the weakest terms. Yet what does this dreaming prove, if it can prove anything? Just, as I have noticed, what the immateriality of human souls did in favour of the souls of brutes; for if dreaming proves possibly or probably the disconnexion of mind and matter in man, it proves the same in brutes, for dreaming is not a human prerogative: brutes dream, and who has not heard dogs bark, and noticed their ineffectual exertions in their sleep on the hearth-

rug? Pursuing the same dogmatic assertion that mind is independent of body, he says, "We are authorized from the facts, that unless some unusual and violent accident interferes, such as serious illness or fatal contusion, the ordinary course of life presents the mind and the body running courses widely different, and in great part of time in opposite directions, and thus affords strong proof both that the mind is independent of the body, and that its destruction, or the period of its entire vigour, is contrary to the analogy of nature." (p. 120.) What a medley of assumptions! The mind and body vary their powers with their age, and these powers vary also as they are exercised. Children excel in certain manual operations; many things are best performed by persons who approach, or who have just attained manhood, as those which require a combination of force and activity; but complete strength and endurance require increased years, and as a facility depends on habit, an advanced period of life may so improve corporal ability, as to give the older man a superiority over the younger and more vigorous. So in intellectual achievements, indeed habit is more operative in these than in bodily labours, and the hand is far more easily commanded than the mind; besides, length of years corrects erroneous opinions, while it extends experience and accumulates knowledge. In other points also an advance in years triumphs over mere manhood, which is often wayward and passionate. But it is gratuitous if not

absurd to say that the body is necessarily reduced* and debilitated *when the mind is in its entire vigour*, for vigour of mind and old age are not an ordinary (senectus ipse est morbus) but an extraordinary concurrence, and it is so indirectly admitted in common parlance, for when an aged person is mentioned as still preserving his faculties, the mere recital notes the singularity. Humanity fails with many years in quickness of apprehension, in memory, in mental exertion and energy.

Lord Brougham reserves his chief argument for the conclusion: this he avows, though he was sufficiently urgent in pressing each proof that he had hitherto advanced; he says, "The strongest of all the arguments, both for the separate existence of the mind and for its surviving the body, remains, and it is drawn from the strictest induction of facts. The body is certainly undergoing change in all its parts. Probably no person of the age of twenty has one single particle in any part of his body which he had at ten; and still less does any portion of the body he was born with continue to exist in or with him. All that he before had has now entered into new combinations, forming parts of other men or of animals, or vegetable or mineral substances, exactly as the body he now has will afterwards be resolved into new combinations after his death; yet the mind

* This exceeds the verse,

"The mind shall banquet though the body pine."

continues one and the same, 'without change or shadow of turning'; none of its parts can be resolved, for it is one and single, and it remains unchanged by the changes of the body." (p. 121.) I have spoken already of the dogmatism that the soul or mind is one or single, yet in the last quotation he far outdoes this and all his other bewildering positions, for it is obvious to sense, notorious, and universal that the soul or mind changes with the body, with too much or too little food, with much sleep or overwatching; all sorts of personal complaints, and a thousand circumstances, accidents, affections, relations, turn and turn again the human mind through all stages, from the lowest dotage to absolute and confirmed madness. Very small incidents will render man strange to his friends, and stranger to himself, almost to the loss of his personal identity. The soul or mind "without change or shadow of turning"! If so, every soul is like boasting Cæsar, "For I am constant as the northern star." It is clear Lord Brougham does not contemplate the resurrection of the body, for as he concludes that the body is renewed entirely at least every ten years, (perhaps much more frequently,) at seventy the self-same man has had seven new bodies; in other words, that this unchanging mind has had seven suits of renewed matter, which matter has been used and is in the occupation of other animals, &c., and which is perpetually adding shreds and patches to the corporal envelopes of other minds, human

and brutal. To suppose that the bodies of men thus interchanged and changing with inferior animals, and even with vegetable and mineral substances, should hereafter resume their bodily being is philosophically impossible, though under other views quite reconcilable to those of faith without stint; for Dr. Brown, the author of Vulgar Errors, says in his Religio Medici, (sect. 48,) "I believe that our estranged and divided ashes* shall unite again; that our separated dust, after so many pilgrimages and transformations into the parts of minerals, plants, animals, elements, shall at the voice of God return into their primitive shapes and join again to make up ther primary and predestinate forms."

Lord Brougham recurs with pleasure to his own statement that the mind continues the same while the body changes, changing entirely after the interval of a few years, and changed repeatedly during a long life, saying, "But observe how strong the inferences arising from these facts, both to prove that the existence of the mind is entirely independent of the existence of the body, and to show the probability of its surviving. If the mind continues the same while all, or nearly all, the body is changed, it follows that the existence of the mind depends not in the least degree upon the existence of the body, for it has already survived

* Eusebius speaks of certain persecutors who burned the bodies of the martyrs and threw their ashes into the Rhone to deprive them of the resurrection. (Præp. Evangel. lib. v. c. 10.)

a total change, or in the common sense of the words, an entire destruction of the body." (p. 122.) Adding another surprise to his startling doctrine, "In short, it is more correct to say that all of us who are now living have bodies formed of what were once the bodies of those who went before us, than it is to say that some of us who are now living at the age of fifty have bodies which in part belonged to others now living at that and at other ages. The phænomena are precisely the same, and the operations are performed in like manner, though with different degrees of expedition; but the facts referred to prove that after the body's death, that is, after the chemic dissolution which the body undergoes during life, the mind continues to exist as before. Here, then, we have that proof so much desiderated, the existence of the soul after the dissolution of the body with which it was connected." (pp. 123, 124.) What a Pindaric conclusion! Because he presumes the soul continues the same, and the body is changing and wearing and rejecting its atoms, and repairing this waste by assimilating imperceptible accessions of matter, the mind, which always existed in conjunction with body, shall exist after the dissolution of body, without body or any bodily adherence or connexion. And he superadds "that it appears to prove the possible immortality of the soul almost as rigorously as if one were to rise from the dead." (p. 124.) What ill assorted fugitive terms, *appear to prove the*

possible! and this is stated in the same sentence to be as rigorous as if one were to rise from the dead. But how could one rise from the dead? Certainly not bodily by his reasoning: not as a soul most certainly, for the souls do not die according to his hypothesis. It is strange that Lord Brougham, who is so confident in marking and separating body and mind, did not suggest how the mind becomes disengaged from the body. Burckhardt says that the people of Shennym believed that the soul escapes through the mouth, and are very anxious not to obstruct its passage; thence they consider strangling a dreadful punishment, and its commutation for impalement is purchased by the relations of the condemned." (Travels, p. 156.) Suppose, however, the body dead and the soul living, what becomes of this surviving partner? The soul has lost its fixity and station by the wreck and dissolution of the matter in which it was imprisoned. This inmate, hitherto living *au secret*, becomes separated from the body and dissociated from matter, what then becomes of it? Those Arabians escaped that difficulty who, according to Eusebius, taught that the souls died with the bodies, but revived at the resurrection. (Præp. Evang. lib. vi. c. 37.) Some sink souls under the earth. And Heraclitus said, agreeably to that location, that souls had a great power of smelling in Hades, αἱ ψυχαι οσμωνται καθ' ἀδην. (Plutarch, Moral. p. 615.) Others leave them to shift for themselves. But where are these immate-

rials to remain? Not on the earth—not in the air. The atmosphere which involves our globe is calculated to extend forty or fifty miles above its surface; something more attenuated pervades all space; even this is proved to be material by its operation on the motion of comets. If, then, all space be filled by matter, and the soul be immaterial, where can it rest? It must, like the poet's genius, ascend "bold and forth on leaving no track behind." When the soul was held to be something substantial, the advocates for this qualified immateriality considered that the soul returned whence it came, to æther, αιθερ σεμνοτατον βιοθρεμμον παντων, that is, while body sunk into the earth, his mind mingled with the soul of the world: Æthereum est quod a seipso movetur. (Cicero, tom. iv. p. 319.) Hence Themistius compared death to the initiation in the mysteries: he added, We say soul has perished when it has changed and returned into the order of the universe, which it could not while living in the body; thus to die resembles participation in the great mysteries, for which reason a similar word was employed on both occasions, τελευταν to die, τελεισθαι to be initiated. (Apud Stobæum, Sermo, c. xix. p. 604.) For an immaterial a vacuum is the fit residence, and negatives can only be at home in a void. A native on the African coast exemplified this immaterial arrangement. Captain Owen asked him how he could live hereafter: he answered, "Me stop here;" then pointing first to his shadow and

upwards, "Dat man go dere*." (Owen's Voyage, vol. i. p. 235.) I do not decide on the question, though I admit I have no notion how that which is not material can subsist in a material world, nor can I understand how matter† can operate except on matter.

* A good commentary on Pindar's brief expression, who called man the dream of a shadow, σκιας οναρ ανθρωπος. (Plutarch Moral. p. 63.)

† Dr. Reid said, "nothing can *act immediately* where it is not I think must be admitted, for I think with Sir Isaac Newton, that power without substance is inconceivable."

THE END.

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INDICATIONS

OF

THE CREATOR.

BY

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MASTER OF TRINITY COLLEGE, AND PROFESSOR OF MORAL PHILOSOPHY IN THE UNIVERSITY OF CAMBRIDGE.

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DEDICATION.

TO

WILLIAM SMYTH, Esquire,

PROFESSOR OF MODERN HISTORY IN THE UNIVERSITY OF CAMBRIDGE.

My dear Professor Smyth,

I know that you have always felt a peculiar interest in the contemplation of Indications of the Creator, drawn from the Creation in which we live, and from the Philosophy which we are led to frame concerning it: and I think that you will be pleased to see a contribution to this train of thought offered at the present moment. It will be a gratification to me, if, in publishing it, I am allowed to inscribe it to you.

One who, like myself, has for many years enjoyed your friendship, and witnessed your influence in this University, may well rejoice at having an opportunity of offering an open tribute of admiration and regard to the virtues and kindly affections by which we have so long profited; and of expressing his gratitude for the pleasure and instruction you have so long diffused among us. And I am happy to be able to add that, now, the wider public also has, in your published Lectures, the means of judging of our obligations to you. All may there see that you have, throughout your labours, been zealous and consistent in inculcating those principles of justice and mutual forbearance, of moral purpose in political designs, and moderation in political action, which, so far as they prevail,

make the world of human history a more visible representation of the will of its Divine Ruler.

That you may long enjoy the recollection of these your past benefits to us, and of our gratitude to you, is the cordial wish and prayer of,

My dear Professor Smyth,

Your affectionate Friend,

W. WHEWELL.

Trinity College, Cambridge,
February 14, 1845.

PREFACE.

THE following EXTRACTS are now published from a persuasion that they may be interesting to many persons who would be unlikely to read the larger works from which they are taken. The *Philosophy of the Sciences* is necessarily a series of somewhat abstruse dissertations, and is likely to be acceptable only to thoughtful students. The *History of Science* is a subject of a more popular character, yet when the history is carried through all the epochs of all the material sciences, probably but few will accompany the historian through a plan so extensive. But lessons of Natural Theology always find a large class of willing readers, when there is any thing of novelty in their form. The reflections which the following pages contain, being those which result from a review of the whole progress of science, and of the principles and processes which have been concerned in that progress, necessarily differ in many respects from those of other writers on Natural Theology.

Perhaps, also, there may be some recommendation of these *Indications of the Creator* in their being the result of researches and reasonings undertaken with no purpose of bringing such indications into view, but with objects of quite another kind. For when an author writes with a theological conclusion set before him from the first, as that to which he must conduct his argument, there may arise a suspicion of a defect of candour and comprehensiveness in what he writes. It may be supposed that he will strain or evade any thing that points away from his predetermined end. But a narrative of the whole History of Science, and an analysis of the processes by which sciences have been formed, are undertakings too large, and their course too rigidly determined by their plan, to allow them to be drawn aside by partial and irrelevant considerations. The passages now extracted as having a Theo-

logical bearing will be seen, on reference, to flow naturally from the trains of thought with which they are combined in the original works.

The main points to which these extracts refer are the Indications of Design in the Creator, and of a Supernatural Origin of the World; and, as connected with this latter point, the consistency of the Inductive with the Revealed History of the World. I have not attempted to combine the Extracts into a system, but have given them in the order in which they occur in the original works. I have added a short extract from another work, on the subject of the Nebular Hypothesis, bearing on the same questions.

The questions which belong to Natural Theology are, in substance, the same from age to age; but they change their aspect with every advance or supposed advance in the Inductive Sciences. I have (p. 53) endeavoured to show the assertion to be quite baseless, that, as science advances, final causes recede before it, and disappear one after the other. I have also, I trust, made it appear, by a survey of the whole history of one great science, Physiology, that in that science the Doctrine of Final Causes has been not only consistent with the successive steps of discovery, but has been the great instrument of every step of discovery from Galen to Cuvier.

I have further attempted to explain that the modern doctrine of Unity of Plan in different kinds of animals does not at all necessarily contradict the Doctrine of Final Causes: that *Morphology* is not necessarily inconsistent with *Teleology*. But I have also had to show that, in modern times, the two doctrines have been put in opposition to each other. The Morphologists have declared, on the ground of their peculiar views, that they could not allow themselves to ascribe to the Creator any intention. (p 28.) And probably an impression as if the evidence of Design in the Creator were obscured and weakened, is generally produced by the first aspect of morphological doctrines, in minds eager for new views, and yet led, by their own want of the discoverer's power, to borrow their new views from others.

I have already ventured to express an opinion* that Inductive Minds, those which have been able to discover Laws of Nature, have also commonly been ready to believe in an Intelligent Author of Nature; while Deductive Minds, those which have employed

* *Bridgewater* Treatise, Book iii. Ch. v. and vi.

themselves in tracing the consequences of Laws discovered by others, have been willing to rest in Laws, without looking beyond to an Author of Laws. I have taken the liberty also (p. 33) to apply this remark to the case of the opposition between Teleology and Morphology; and have remarked that Cuvier, the great Zoological Discoverer of our time, was a firm believer in Creative Design, notwithstanding the arguments of the Morphologists who controverted such doctrines. I have, in the following pages, so fully discussed this subject, that it would be superfluous to add any thing here, if it were not that, as I have already said, morphological views have a peculiar tendency to appear unfavourable to the belief of final causes, in minds to which they are new.

But as morphological views, when they are first presented, appear to some persons to dim the brightness of those proofs of Creative Design with which we are familiar; so, on the other hand, when a newly discovered instance of Creative Design is first made known to us by the zoological discoverer, it is impossible for most persons not to see in it a clear and strong indication of an Intelligent Creator; however much this conviction may afterwards be obscured and confused by morphological generalities of expression. I have given an example of such a new evidence of design, in Mr. Owen's discoveries with regard to the process of suckling of the kangaroo (p. 47). I do not think any one, becoming acquainted for the first time with the provisions for this purpose, as described by Mr. Owen, can help receiving the conviction which Mr. Owen expresses, that this is an "irrefragable evidence of creative forethought."

Mr. Owen, in this as in many other parts of his writings, is an instance, in addition to those which I have previously adduced, of the teleological turn of the Inductive Mind. It would be going too far to say, conversely, that those whose minds are not inductive have a bias towards morphology. But yet this would not be too much to say, if morphology were very loosely understood. We should not be surprised at the morphologist coming to conclusions very different from those of the teleological discoverer, if that unity of plan which the morphologists assert, be made to consist in resemblances of the most heterogeneous and fantastical kind; if, for instance, plants were supposed to be analogous to the branching forms of crystallization; or trees growing out of the ground to the electrical brush: if some animals were supposed to fall in with the

supposed unity of plan because they have abundant tail, and ornaments for the head in the form of tufts, crests, or horns, while others occupy an analogous position to these because they are of a soft and sluggish character and abundantly edible: if, again, we have a part of a classification in which some animals are placed because they have been denounced as impure, with other animals because they are wild and striped, and others because they have spines and prickles: if, finally, notions of moral judgments and of symbolism are introduced into natural history, and we are told of classes of animals which are symbolically types of evil. Morphology, pursued with such habits of mind, cannot, we should suppose from all the analogy which the history of science lends us, lead to any solid truth, either in natural history or in philosophy.

There is one morphological doctrine of modern times which has attracted much notice, in consequence of its being imagined to offer a solution of the great difficulty of the uniformitarian theory in geology, namely, the appearance of new species and classes of animals as we proceed from the earlier to the later formations. The morphological doctrine of which I speak is, that the kinds of animals may be arranged in a series ascending from lower to higher: and that each animal of a higher kind, in the progress of its embryo state, passes through states which are the final condition of the lower kind. The application of this morphological doctrine to geological difficulty is this: that the higher kinds of animals came later, and were developed from the lower kinds, which came earlier in the series, by new peculiar conditions, operating upon the embryo, and carrying it to a higher stage. Now in the apparent simplicity of this doctrine, thus enunciated in general terms, we have that which recommends it to those who accept such doctrines in their general shape. But the zoologist and the geologist, who can test its general assertions by the special facts with which their researches have made them acquainted, know that the facts do not agree with this doctrine. Without going into detail on this subject, I venture to offer the following remarks.

It is not at all agreed among eminent physiologists,* that animals can be arranged in a series ascending from lower to higher, such that each animal of a higher kind in its embryo state passes through the successive stages of the lower kinds; the characters of these

* *I make these* remarks on the authority of a physiological friend.

stages being (in the asserted doctrine) taken from the brain and the heart, and man being the highest point of the series. For such physiologists assert, that the brain of the human embryo does not resemble, at any period, however early, the brain of any Mollusk or of any Articulate, which are two of the lower stages. It never passes through a stage comparable or analogous to a permanent condition of the same organ in any Invertebrate Animal. And in like manner the spinal cord in the human vertebræ at no period agrees with the corresponding part of the lower kinds of animals. The moment it becomes visible in the human embryo, it is entirely dorsal in position; while in Mollusks and Articulates a great part, or nearly the whole is ventral. The same is true of the heart, or centre of the vascular system, which has always a different relative position to the great nervous centre in the Human Embryo from what it has in any Articulate Animal, and in most Mollusks.

Again; the order of lower and higher stages of developement of the human embryo, does not agree with the successive stages of animal life at successive periods of the earth's history as disclosed by geology. For even if we were to admit, what has not been proved, that the lowest kind of animal developement, which has been termed *polygastric monads*, exist in the earliest fossiliferous rocks, these rocks also manifest the higher types of Echinodermal, Articulate, and Molluscous Animals; while the human germ, commencing with a form and vital properties analogous to those of the monad, passes from the monad stage at once to the Vertebrate, and never enters or typifies the Radiate, the Articulate, or the Molluscous series of organic forms: whereas these forms of Invertebrates have preceded the Vertebrate forms on the earth's surface according to the best evidence disclosed by geology.

Moreover in the Vertebrate, as well as in the Invertebrate part of the animal series, the asserted order fails. It has been pointed out by others,* that in order to produce the asserted accordance between the order of zoological developement and geological succession, geological facts are misrepresented in the most flagrant manner. For Vertebrate animals do exist in the Silurian rocks, from which the asserted law excludes them. Again; if we are to have a geological period eminently characterized by Saurians, it must be that of the lias and oolites, and not that of the new red

* Parker's Magazine, Feb. 1845, p. 102.

sandstone, as asserted in the hypothetical scheme; while one of the Saurians which most approaches the mammalian character, has recently been found in a formation below those in which the more ordinary Saurian forms occur. Again; birds, which the new law places in the oolitic group, have left their traces on the earlier formation of the new red sandstone. The new law finds geological epochs corresponding to some of the orders of quadrupeds, namely the rodents, ruminants, digitigrades, and quadrumans; but it gives no place to the other orders, which might claim one with equal reason, pachyderms, marsupials, plantigrades and edentates. Finally, the law requires the monkey to be placed in the newer tertiaries; whereas their remains have been found in the older tertiaries of France, India, and England.

Further, the doctrine of the developement of the kinds of animals from one kind to another by the influence of external conditions, is contrary to the conclusions of the most esteemed physiologists, as is stated in the following pages. This doctrine is coupled with the assertion of the origin of living beings without an egg or other living parent. This assertion is at variance with the latest and most careful, as well as with all preceding experiments, of eminent physiologists.* And the tenet that any animal can be advanced to a higher stage by a period of gestation prolonged beyond the usual time, is contrary to all fact. The advancement of the vital organs to more perfect stages of developement requires the stimulus of respiration and muscular action, for which birth is essential. Under these conditions, the organs of animals have been developed beyond their usual state; but, as is stated in the following pages, never to a stage beyond that which characterizes the species.

I have hitherto spoken in general terms of the *stages* of animal organization, meaning by that, such stages as fish, lizard, bird, beast. And I have spoken as if there were, in the question before us, no difficulty, except that of advancing from one of these stages to another. But in fact there have been and are existing on the earth many kinds of fish, many kinds of saurians, many of birds, many of beasts. These have the most various forms and habits, with an internal organization of each, which, though wonderful, is in a great measure intelligible, when considered as designed for the animal's support and preservation according to its habits. But

* Owen's Lectures, 1843, p. 33.

to arrange all these kinds of animals, that is, the whole animal creation, in a series, as successive stages of one line of developements, or of any ramified line; and to make the form and the habits of each the result of the stage of developement at which the animal has arrived; is a mode of speculating which is the opposite of that which all successful zoological speculation has followed, and may be expected to lead to opposite results.

The same imperfection in the evidence would be found, if we were to examine, in other subjects as well as in zoology, the asserted law of the identity of the stages of natural developement of the faculties, ascending from beast to man, with the probable history of mankind. For instance, the view of the speech of man as of the same nature with the signs by which animals express their feelings and purposes, is a view which leaves out of sight the essential character of language. For the essential nature of language consists, not in its expressing particular feelings and purposes, but in its expressing thoughts and things in a *general* manner. Words express abstract thoughts, each of which may be applied to innumerable particular objects; and Human Reason can deal with thoughts so abstracted, and by means of them, can express Truth, which it is her peculiar privilege to contemplate. There are, in animals, no germs of this power of abstraction, this apprehension of abstract and general Truth. The Instinct of animals cannot become the Reason of man, by any process of developement. We cannot unfold the mind of a spider or a bee into the mind of a geometer.

On the other subjects to which the Extracts refer, it does not appear necessary to add any thing to what is there said. The opinions there expressed have been for some time before the world; and are such as, I trust, can give just offence to no one.

Trinity College, Cambridge,
February 14, 1845.

EXTRACTS,

ETC.

ASTRONOMY.

THE COPERNICAN SYSTEM.

[About A. D. 1500, Copernicus had satisfied himself of the truth of the Heliocentric Theory, according to which the planets, and the earth as one of them, revolve round the sun as the centre of their motions. His book *De Revolutionibus Orbium Celestium* was published in 1543, the year of his death. In 1610 Galileo, having invented a telescope, discovered Jupiter's satellites and the moon-like phases of Venus; and these discoveries supplied additional arguments for the truth of the Copernican system. This system Galileo afterwards defended in his writings, which were on that account condemned as heretical by the Inquisition.]

* The doctrines promulgated by Copernicus excited no visible alarm among the theologians of his own time; we may assign as a reason for this, that those who were disposed to assert the sway of authority in all matters of belief, had not yet been roused and ruffled by the aggressions of innovators in philosophy and religion, as they soon afterwards were. Probably, also, we ought to take into account the different temper and circumstances of the ultramontane and Italian learned men. The latter, living under the immediate shadow of the papal chair, were necessarily less bold in their speculations, and less open in their promulgation of any opinions which might have a taint of heresy. This influence operated less strongly in Poland and Germany; and we find no evidence which leads us to deny to these countries the glory of having received the Copernican system of the world, from the first, with satisfaction, and without bigoted opposition. The great religious reform which had its rise in Germany about the time of the promulgation of the Copernican system, showed sufficiently that that was the land where opinions would assert their freedom; and where authority could not, with prudence, urge superfluous claims.

But in Italy the church entertained the persuasion that her

* History of the Inductive Sciences. Book v. Chap. iii. Sect. 4.

authority could not be upheld at all, without maintaining it to be supreme on all points. The spirit of dogmatism of the middle ages had descended upon the ecclesiastical institutions of the seventeenth century; and in consistency with that spirit, it was criminal to disturb received doctrines, or to separate philosophy from religion. The tenet of the earth being at rest in the centre of the universe, was not only a part of the established school-philosophy, but was also, it was conceived, sanctioned by Scripture. The Copernican system, therefore, so far as it came into view, was looked at with suspicion and aversion. But though this system is afterwards, in the official condemnation of it, spoken of as "entertained by many," it never came under the notice of the spiritual judges in any conspicuous manner, till it had been illustrated by Galileo's discoveries, and recommended by his writings.

The story of the condemnation of Galileo by the Inquisition, for asserting the motion of the earth, and of his formal renunciation of this doctrine in the presence of his judges, has been so often told, that I need not here repeat the details. It rather belongs to our purpose to consider what lessons may be gathered from it with regard to the progress of science.

One reflection which occurs is, that both Galileo's behaviour and that of his judges, appear to disclose some Italian traits of character. The assumption of supreme authority in all matters of opinion, an assumption unsuited to the powers and condition of man, had led, it would seem, to a kind of artificial state of compromise, in which men's published opinions were treated as a point of decorum only, the truth being left out of consideration. Thus Galileo seems to have expected that the flimsiest veil of professed submission in his belief would enable his arguments in favour of the Copernican doctrine to pass unvisited; and the inquisitors were satisfied with a renunciation which they could not believe to be sincere. This artificial state, again, was probably one occasion of the furtive mode of insinuating his doctrines, so much employed by Galileo, which some of his historians admire as subtle irony, and others blame as insincerity. Nor do we see any thing to lead us to believe that Galileo was not at all times ready to make such submissions as the spiritual tribunals required; although undoubtedly he was also very desirous of promoting the cause of what he conceived to be philosophical truth. The same absence of earnestness appears on the other side, in the courtesy and indulgence with which, as is now almost universally allowed, Galileo was treated throughout the course of the proceedings against him. For his being confined in the dungeons of the Inquisition, as his lot has sometimes been described, appears to have consisted principally in his being placed under some slight restrictions, first, in the house of Nicolini, the ambassador of his own sovereign, the Duke of Tuscany, and afterwards in the country-seat of Archbishop Piccolomini, one of his own warmest friends. It appears to be not going too far to suppose that the extravagant assumptions of the church of Rome, which it was impossible *sincerely* to allow, and necessary to evade by artifice, generated

in the philosophers of Italy an acuteness and subtlety, but also a suppleness and servility very different from the vigorous independent habits of thought of Germany and England.

But there remains something more to be attended to in the case of Galileo; for though the See of Rome might exaggerate the claims of religious authority, there is a question of no small real difficulty, which the progress of science often brings into notice, as it did then. The revelation on which our religion is founded, seems to declare, or to take for granted, opinions on points on which science also gives her decision; and we then come to this dilemma,—that doctrines, established by a scientific use of reason, may seem to contradict the declarations of revelation according to our view of its meaning;—and yet, that we cannot, in consistency with our religious views, make reason a judge of the truth of revealed doctrines. In the case of astronomy, on which Galileo was called in question, the general sense of cultivated and sober-minded men has long ago drawn the distinction between religious and physical tenets which is necessary to resolve this dilemma. On this point, it is reasonably held, that the phrases which are employed in Scripture respecting astronomical facts, are not to be made use of to guide our scientific opinions; they may be supposed to answer their end if they fall in with common notions, and are thus effectually subservient to the moral and religious import of revelation. But the establishment of this distinction was not accomplished without long and distressing controversies. Nor, if we wish to include all cases in which the same dilemma may again come into play, is it easy to lay down an adequate canon for the purpose. For we can hardly foresee, beforehand, what part of the past history of the universe may eventually be found to come within the domain of science; or what bearing the tenets, which science establishes, may have upon our view of the providential and revealed government of the world. But without attempting here to generalize on this subject, there are two reflections which may be worth our notice; they are supported by what took place in reference to astronomy on the occasion of which we are speaking; and may, at other periods, be applicable to other sciences.

In the first place, the meaning which any generation puts upon the phrases of Scripture, depends, more than is at first sight supposed, upon the received philosophy of the time. Hence, while men imagine that they are contending for revelation, they are, in fact, contending for their own interpretation of revelation, unconsciously adapted to what they believe to be rationally probable. And the new interpretation, which the new philosophy requires, and which appears to the older school to be a fatal violence done to the authority of religion, is accepted by their successors without the dangerous results which were apprehended. When the language of Scripture, invested with its new meaning, has become familiar to men, it is found that the ideas which it calls up, are quite as reconcilable as the former ones were, with the soundest religious views. And the world then looks back with surprise at the error

of those who thought that the essence of revelation was involved in their own arbitrary version of some collateral circumstance. At the present day we can hardly conceive how reasonable men should have imagined that religious reflections on the stability of the earth, and the beauty and use of the luminaries which revolve round it, would be interfered with by its being acknowledged that this rest and motion are apparent only.

In the next place, we may observe that those who thus adhere tenaciously to the traditionary or arbitrary mode of understanding Scriptural expressions of physical events, are always strongly condemned by succeeding generations. They are looked upon with contempt by the world at large, who cannot enter into the obsolete difficulties with which they encumbered themselves; and with pity by the more considerate and serious, who know how much sagacity and right-mindedness are requisite for the conduct of philosophers and religious men on such occasions; but who know also how weak and vain is the attempt to get rid of the difficulty by merely denouncing the new tenets as inconsistent with religious belief, and by visiting the promulgators of them with severity such as the state of opinions and institutions may allow. The prosecutors of Galileo are still held up to the scorn and aversion of mankind; although, as we have seen, they did not act till it seemed that their position compelled them to do so, and then proceeded with all the gentleness and moderation which were compatible with judicial forms.

THE NEBULAR HYPOTHESIS.

[* Laplace has proved that the state of the solar system is *stable:* that is, the ellipses which the planets describe will always remain nearly circular, and the axis of revolution of the earth will never deviate much from its present position. He has shown also that this stability depends on the fact that the planets all move in the same direction, in orbits of small eccentricity, and slightly inclined to each other. He has moreover given a mathematical proof that this fact is not accidental. Hence we may regard this arrangement as the result of design, and as intended to secure the stability of the system.]

† We have referred to Laplace, as a profound mathematician, who has strongly expressed the opinion, that the arrangement by which the stability of the solar system is secured is not the result of chance; that "*a primitive cause* has directed the planetary motions." This author, however, having arrived, as we have done, at this conviction, does not draw from it the conclusion which has appeared to us so irresistible, that "the admirable arrangement of the solar system cannot but be the work of an intelligent and most powerful being." He quotes these expressions, which are those

* Bridgewater Treatise. Book II., chap. iii.
† *Ib.* Book II., chap. vii.

origin of any previous system of things, out of which the present may appear to have grown: and must pursue this train of inquiries unremittingly, so long as the answer which it receives describes a mere assemblage of matter and motion; since it would be to contradict the laws of matter and the nature of motion, to suppose such an assemblage to be the *first* condition.

The reflection just stated, may be illustrated by the further consideration of the Nebular Hypothesis. This opinion refers us, for the origin of the solar system, to a sun surrounded with an atmosphere of enormously elevated temperature, revolving and cooling. But as we ascend to a still earlier period, what state of things are we to suppose?—a still higher temperature, a still more diffused atmosphere. Laplace conceives that, in its primitive state, the sun consisted in a diffused luminosity so as to resemble those nebulæ among the fixed stars, which are seen by the aid of the telescope, and which exhibit a nucleus, more or less brilliant, surrounded by a cloudy brightness. "This anterior state was itself preceded by other states, in which the nebulous matter was more and more diffuse, the nucleus being less and less luminous. We arrive," Laplace says, "in this manner, at a nebulosity so diffuse that its existence could scarcely be suspected."

"Such is," he adds, "in fact, the first state of the nebulæ which Herschel carefully observed by means of his powerful telescopes. He traced the progress of condensation, not indeed on one nebula, for this progress can only become perceptible to us in the course of centuries; but in the assemblage of nebulæ; much in the same manner as in a large forest we may trace the growth of trees among the examples of different ages which stand side by side. He saw in the first place the nebulous matter dispersed in patches, in the different parts of the sky. He saw in some of these patches this matter feebly condensed round one or more faint nuclei. In other nebulæ, these nuclei were brighter in proportion to the surrounding nebulosity; when by a further condensation the atmosphere of each nucleus becomes separate from the others, the result is multiple nebulous stars, formed by brilliant nuclei very near each other, and each surrounded by an atmosphere: sometimes the nebulous matter condensing in a uniform manner has produced nebulous systems which are called *planetary*. Finally, a still greater degree of condensation transforms all these nebulous systems into stars. The nebulæ, classed according to this philosophical view, indicate with extreme probability their future transformation into stars, and the anterior nebulous condition of the stars which now exist."

It appears then that the highest point to which the utmost range of conjectures can conduct us, is "an extremely diffused nebulosity," attended, we may suppose, by a far higher degree of heat, than that which, at a later period of the hypothetical process, keeps all the materials of our earth and planets in a state of vapour. Now is it not impossible to avoid asking, whence was this light, this heat, this diffusion? How came the laws which such a state implies, to be already in existence? Whether light and heat produce these

charge against our doctrines, that there is a difficulty in reconciling with them arbitrary guesses and half-formed theories. We shall, however, make a few observations upon this *nebular hypothesis*, as it may be termed.

2. If we grant, for a moment, the hypothesis, it by no means proves that the solar system was formed without the intervention of intelligence and design. It only transfers our view of the skill exercised, and the means employed, to another part of the work. For, how came the sun and its atmosphere to have such materials, such motions, such a constitution, that these consequences followed from their primordial condition? How came the parent vapour thus to be capable of coherence, separation, contraction, solidification? How came the laws of its motion, attraction, repulsion, condensation, to be so fixed, as to lead to a beautiful and harmonious system in the end? How came it to be neither too fluid nor too tenacious, to contract neither too quickly nor too slowly, for the successive formation of the several planetary bodies? How came that substance, which at one time was a luminous vapour, to be at a subsequent period, solids and fluids of many various kinds? What but design and intelligence prepared and tempered this previously existing element, so that it should by its natural changes produce such an orderly system?

And if in this way we suppose a planet to be produced, what sort of a body would it be?—something, it may be presumed, resembling a large meteoric stone. How comes this mass to be covered with motion and organization, with life and happiness? What primitive cause stocked it with plants and animals, and produced all the wonderful and subtle contrivances which we find in their structure, all the wide and profound mutual dependences which we trace in their economy? Was man, with his thought and feeling, his powers and hopes, his will and conscience, also produced as an ultimate result of the condensation of the solar atmosphere? Except we allow a prior purpose and intelligence presiding over this material "primitive cause," how irreconcilable is it with the evidence which crowds in upon us on every side!

3. In the next place, we may observe concerning this hypothesis, that it carries us back to the beginning of the present system of things; but that it is impossible for our reason to stop at the point thus presented to it. The sun, the earth, the planets, the moons were brought into their present order out of a previous state, and, as is supposed in the theory, by the natural operation of laws. But how came that previous state to exist? We are compelled to suppose that it, in like manner, was educed from a still prior state of things; and this, again, must have been the result of a condition prior still. Nor is it possible for us to find, in the tenets of the nebular hypothesis, any resting-place or satisfaction for the mind. The same reasoning faculty, which seeks for the origin of the present system of things, and is capable of assenting to, or dissenting from the hypothesis propounded by Laplace as an answer to this *inquiry, is* necessarily led to seek, in the same manner, for the

origin of any previous system of things, out of which the present may appear to have grown: and must pursue this train of inquiries unremittingly, so long as the answer which it receives describes a mere assemblage of matter and motion; since it would be to contradict the laws of matter and the nature of motion, to suppose such an assemblage to be the *first* condition.

The reflection just stated, may be illustrated by the further consideration of the Nebular Hypothesis. This opinion refers us, for the origin of the solar system, to a sun surrounded with an atmosphere of enormously elevated temperature, revolving and cooling. But as we ascend to a still earlier period, what state of things are we to suppose?—a still higher temperature, a still more diffused atmosphere. Laplace conceives that, in its primitive state, the sun consisted in a diffused luminosity so as to resemble those nebulæ among the fixed stars, which are seen by the aid of the telescope, and which exhibit a nucleus, more or less brilliant, surrounded by a cloudy brightness. "This anterior state was itself preceded by other states, in which the nebulous matter was more and more diffuse, the nucleus being less and less luminous. We arrive," Laplace says, "in this manner, at a nebulosity so diffuse that its existence could scarcely be suspected."

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It appears then that the highest point to which this series of conjectures can conduct us, is "an extremely diffused nebulosity," attended, we may suppose, by a far higher degree of heat, than that which, at a later period of the hypothetical process, keeps all the materials of our earth and planets in a state of vapour. Now is it not impossible to avoid asking, whence was this light, this heat, this diffusion? How came the laws which such a state implies, to be already in existence? Whether light and heat produce their

effects by means of fluid vehicles or otherwise, they have complex and varied laws which indicate the existence of some subtle machinery for their action. When and how was this machinery constructed? Whence too that enormous expansive power which the nebulous matter is supposed to possess? And if, as would seem to be supposed in this doctrine, all the material ingredients of the earth existed in this diffuse nebulosity, either in the state of vapour, or in some state of still greater expansion, whence were they and their properties? how came there to be of each simple substance which now enters into the composition of the universe, just so much and no more? Do we not, far more than ever, require an origin of this origin? an explanation of this explanation? Whatever may be the merits of the opinion as a physical hypothesis, with which we do not here meddle, can it for a moment prevent our looking beyond the hypothesis, to a First Cause, an Intelligent Author, an origin proceeding from free volition, not from material necessity?

But again: let us ascend to the highest point of the hypothetical progression: let us suppose the nebulosity diffused throughout all space, so that its course of running into patches is not yet begun. How are we to suppose it distributed? Is it equably diffused in every part? clearly not; for if it were, what should cause it to gather into masses, so various in size, form and arrangement? The separation of the nebulous matter into distinct nebulæ implies necessarily some original inequality of distribution; some determining circumstances in its primitive condition. Whence were these circumstances? this inequality? we are still compelled to seek some ulterior agency and power.

Why must the primeval condition be one of change at all? Why should not the nebulous matter be equably diffused throughout space, and continue for ever in its state of equable diffusion, as it must do, from the absence of all cause to determine the time and manner of its separation? why should this nebulous matter grow cooler and cooler? why should it not retain for ever the same degree of heat, whatever heat be? If heat be a fluid, if to cool be to part with its fluid, as many philosophers suppose, what becomes of the fluid heat of the nebulous matter, as the matter cools down? Into what unoccupied region does it find its way?

Innumerable questions of the same kind might be asked, and the conclusion to be drawn is, that every new physical theory which we include in our view of the universe, involves us in new difficulties and perplexities, if we try to erect it into an ultimate and final account of the existence and arrangement of the world in which we live. With the evidence of such theories, considered as scientific generalizations of ascertained facts, with their claims to a place in our natural philosophy, we have here nothing to do. But if they are put forwards as a disclosure of the ultimate cause of that which occurs, and as superseding the necessity of looking further or higher; if they claim a place in our Natural Theology, as well as our Natural Philosophy; we conceive that their pretensions will *not bear a moment's examination.*

Leaving then to other persons and to future ages to decide upon the scientific merits of the nebular hypothesis, we conceive that the final fate of this opinion cannot, in sound reason, affect at all the view which we have been endeavouring to illustrate;—the view of the universe as the work of a wise and good Creator. Let it be supposed that the point to which this hypothesis leads us is the ultimate point of physical science; that the farthest glimpse we can obtain of the material universe by our natural faculties, shows it to us occupied by a boundless abyss of luminous matter; still we ask, how space came to be thus occupied, how matter came to be thus luminous? If we establish by physical proofs, that the first fact which can be traced in the history of the world is that "there was light;" we shall still be led, even by our natural reason, to suppose that before this could occur, "God said, Let there be light."

PHYSIOLOGY.

RECOGNITION OF FINAL CAUSES IN PHYSIOLOGY.

*THERE is one idea which the researches of the physiologist and the anatomist so constantly force upon him, that he cannot help assuming it as one of the guides of his speculations; I mean, the idea of a *purpose*, or, as it is called in Aristotelian phrase, a *final cause*, in the arrangements of the animal frame. It is impossible to doubt that the motive nerves run along the limbs, *in order* that they may convey to the muscles the impulses of the will; and that the muscles are attached to the bones, *in order* that they may move and support them. This conviction prevails so steadily among anatomists, that even when the use of any part is altogether unknown, it is still taken for granted that it has some use. The developement of this conviction,—of a purpose in the parts of animals,—of a function to which each portion of the organization is subservient,—contributed greatly to the progress of physiology; for it constantly urged men forwards in their researches respecting each organ, till some definite view of its purpose was obtained. The assumption of hypothetical final causes in physics may have been, as Bacon asserts it to have been, prejudicial to science; but the assumption of unknown final causes in physiology, has given rise to the science. The two branches of speculation, Physics and Physiology, were equally led, by every new phenomenon, to ask their question, "Why?" But, in the former case, "why" meant "through what cause?" in the latter, "for what end?" And though it may be possible to introduce into physiology the doctrine of efficient causes, such a step can never obliterate the obligations which the science owes to the pervading conception of a purpose contained in all organization.

* History of the Inductive Sciences. Book xvii. Chap. i. Sect. 2.

This conception makes its appearance very early. Indeed, without any special study of our structure, the thought, that we are fearfully and wonderfully made, forces itself upon men, with a mysterious impressiveness, as a suggestion of our Maker. In this bearing, the thought is developed to a considerable extent in the well-known passage in Xenophon's Conversations of Socrates. Nor did it ever lose its hold on sober-minded and instructed men. The Epicureans, indeed, held that the eye was not made for seeing, nor the ear for hearing; and Asclepiades, whom we have already mentioned as an impudent pretender, adopted this wild dogma. Such assertions required no labour. "It is easy," says Galen, "for people like Asclepiades, when they come to any difficulty, to say that nature has worked to no purpose." The great anatomist himself pursues his subject in a very different temper. In a well-known passage, he breaks out into an enthusiastic scorn of the folly of the atheistical notions. "Try," he says, "if you can imagine a shoe made with half the skill which appears in the skin of the foot." Some one had spoken of a structure of the human body which he would have preferred to that which it now has. "See," Galen exclaims, after pointing out the absurdity of the imaginary scheme, "see what brutishness there is in this wish. But if I were to spend more words on such cattle, reasonable men might blame me for desecrating my work, which I regard as a religious hymn in honour of the Creator."

THE PLANS OF ANIMAL FORMS.

*Animals were divided by Lamarck into vertebrate and invertebrate; and the general analogies of all vertebrate animals are easily made manifest. But with regard to other animals, the point is far from clear. Cuvier was the first to give a really philosophical view of the animal world in reference to the plan on which each animal is constructed. There are,† he says, four such plans; —four forms on which animals appear to have been modelled; and of which the ulterior divisions, with whatever titles naturalists have decorated them, are only very slight modifications, founded on the developement or addition of some parts which do not produce any essential change in the plan.

The four great branches of the animal world are the *vertebrata*, *mollusca*, *articulata*, *radiata*; and the differences of these are so important that a slight explanation of them may be permitted.

The *vertebrata* are those animals which (as man and other sucklers, birds, fishes, lizards, frogs, serpents,) have a back-bone and a skull with lateral appendages, within which the viscera are included, and to which the muscles are attached.

The *mollusca*, or soft animals, have no bony skeleton; the muscles are attached to the skin, which often includes stony plates

* History of the Inductive Sciences. Book xvii. Chap. vii. Sect. 2, 3.
† *Règne Animal*, p. 57.

called shells; such molluscs are shell-fish, others are cuttle-fish, and many pulpy sea-animals.

The *articulata* consist of *crustacea*, (lobsters, &c.,) *insects*, *spiders*, and *annulose worms*, which, like the other classes of this branch, consist of a head and a number of successive portions of the body jointed together, whence the name.

Finally, the *radiata* include the animals known under the name of *zoophytes*. In the preceding three branches, the organs of motion and of sense were distributed symmetrically on the two sides of an axis, so that the animal has a right and a left side. In the radiata the similar members radiate from the axis in a circular manner, like the petals of a regular flower.

The whole value of such a classification cannot be understood without explaining its use in enabling us to give general descriptions, and general laws of the animal functions, of the classes which it includes; but in the present part of our work our business is to exhibit it as an exemplification of the reduction of animals to laws of symmetry. The bipartite symmetry of the form of vertebrate and articulate animals is obvious; and the reduction of the various forms of such animals to a common type has been effected, by attention to their anatomy, in a manner which has satisfied those who have best studied the subject. The molluscs, especially those in which the head disappears, as oysters, or those which are rolled into a spiral, as snails, have a less obvious symmetry, but here also we can apply certain general types. And the symmetry of the radiated zoophytes is of a nature quite different from all the rest, and approaching, as we have suggested, to the kind of symmetry found in plants. Some naturalists have doubted whether* these zoophytes are not referrible to two types (*acrita* or polypes, and true *radiata*), rather than to one.

Supposing this great step in Zoology, of which we have given an account,—the reduction of all animals to four types or plans,—to be quite secure, we are then led to ask whether any further advance is possible;—whether several of these types can be referred to one common form by any wider effort of generalization. On this question there has been a considerable difference of opinion. Geoffroy Saint-Hilaire,† who had previously endeavoured to show that all vertebrate animals were constructed so exactly upon the same plan as to preserve the strictest analogy of parts in respect to their osteology, thought to extend this unity of plan by demonstrating, that the hard parts of crustaces and insects are still only modifications of the skeleton of higher animals, and that therefore the type of vertebrata must be made to include them also:—the segments of the articulata are held to be strictly analogous to the vertebræ of the higher animals, and thus the former live *within* their vertebral column in the same manner as the latter live *without* it. Attempts have even been made to reduce molluscous and vertebrate animals to a community of type, as we shall see shortly.

* Brit. Assoc. Rep. iv. 227. † Mr. Jenyns, ibid. iv. 150.

Another application of the principle, according to which creatures the most different are developements of the same original type, may be discerned* in the doctrine, that the embryo of the higher forms of animal life passes by gradations through those forms which are permanent in inferior animals. Thus, according to this view, the human fœtus assumes successively, the plan of the zoophyte, the worm, the fish, the turtle, the bird, the beast. But it has been well observed, that "in these analogies we look in vain for the precision which can alone support the inference that has been deduced;"† and that at each step, the higher embryo and the lower animal which it is supposed to resemble, differ in having each different organs suited to their respective destinations.

Cuvier‡ never assented to this view, nor to the attempts to refer the different divisions of his system to a common type. "He could not admit," says his biographer, "that the lungs or gills of the vertebrates are in the same connexion as the branchiæ of molluscs and crustaces, which in the one are situated at the base of the feet, or fixed on the feet themselves, and in the other often on the back or about the arms. He did not admit the analogy between the skeleton of the vertebrates and the skin of the articulates; he could not believe that the tenia and the sepia were constructed on the same plan; that there was a similarity of composition between the bird and the echinus, the whale and the snail; in spite of the skill with which some persons sought gradually to efface their discrepancies."

Whether it may be possible to establish, among the four great divisions of the "Animal Kingdom," some analogies of a higher order than those which prevail within each division, I do not pretend to conjecture. If this can be done, it is clear that it must be by comparing the types of these divisions under their most general forms: and thus Cuvier's arrangement, so far as it is itself rightly founded on the unity of composition of each branch, is the surest step to the discovery of a unity pervading and uniting these branches. But though those who generalize surely, and those who generalize rapidly, may travel in the same direction, they soon separate so widely, that they appear to move from each other. The partisans of a universal "unity of composition" of animals, accused Cuvier of being too inert in following the progress of physiological and zoological science. Borrowing their illustration from the political parties of the times, they asserted that he belonged to the science of the *resistance*, not to the science of the *movement*. Such a charge is highly honourable to him; for no one acquainted with the history of zoology can doubt that he had a great share in the impulse by which the "movement" was occasioned; or that he himself made a large advance with it; and it was because he was so poised by the vast mass of his knowledge, so temperate in his love of doubtful generalizations, that he was not swept on in the wilder part of the stream. To such a charge, moderate reformers,

* Dr. Clark, Brit. Assoc. Report, iv. 113. † Dr. Clark, p. 114.
‡ Laurillard, Elog. de Cuvier, p. 66.

who appreciate the value of the good which exists, though they try to make it better, and who know the knowledge, thoughtfulness, and caution, which are needful in such a task, are naturally exposed. For us, who can only decide on such a subject by the general analogies of the history of science, it may suffice to say, that it appears doubtful whether the fundamental conceptions of affinity, analogy, transition, and developement, have yet been fixed in the minds of physiologists with sufficient firmness and clearness, or unfolded with sufficient consistency and generality, to make it likely that any great additional step of this kind can for some time be made.

USE OF FINAL CAUSES IN PHYSIOLOGY.

Doctrine of Unity of Plan.—We have repeatedly seen, in the course of our historical view of physiology, that those who have studied the structure of animals and plants, have had a conviction forced upon them, that the organs are constructed and combined in subservience to the life and functions of the whole. The parts have a purpose, as well as a law;—we can trace final causes, as well as laws of causation. This principle is peculiar to physiology; and it might naturally be expected that, in the progress of the science, it would come under special consideration. This accordingly has happened; and the principle has been drawn into a prominent position by the struggle of two antagonist schools of physiologists. On the one hand, it has been maintained that this doctrine of final causes is altogether unphilosophical, and requires to be replaced by a more comprehensive and profound principle: on the other hand, it is asserted that the doctrine is not only true, but that, in our own time, it has been fixed and developed so as to become the instrument of some of the most important discoveries which have been made. Of the views of these two schools we must endeavour to give some account.

The disciples of the former of the two schools express their tenets by the phrases *unity* of *plan*, *unity* of *composition;* and the more detailed developement of these doctrines has been termed the *Theory of Analogues*, by Geoffroy Saint-Hilaire, who claims this theory as his own creation. According to this theory, the structure and functions of animals are to be studied by the guide of their analogy only; our attention is to be turned, not to the fitness of the organization for any end of life or action, but to its resemblance to other organizations by which it is gradually derived from the original type.

According to the rival view of this subject, we must not assume, and cannot establish, that the plan of all animals is the same, or their composition similar. The existence of a single and universal system of analogies in the construction of all animals is entirely unproved, and therefore cannot be made our guide in the study of their properties. On the other hand, the plan of the animal, the

Geoffroy," "not to ascribe to God any intention." And when Cuvier speaks of the combination of organs in such order that they may be in consistence with the part which the animal *has to play* in nature; his rival rejoins,† "I know nothing of animals which *have to play* a part in nature." Such a notion is, he holds, unphilosophical and dangerous. It is an abuse of final causes which makes the cause to be engendered by the effect. And to illustrate still further his own view, he says, "I have read concerning fishes, that because they live in a medium which resists more than air, their motive forces are calculated so as to give them the power of progression under those circumstances. By this mode of reasoning, you would say of a man who makes use of crutches, that he was originally destined to the misfortune of having a leg paralyzed or amputated."

How far this doctrine of unity in the plan in animals is admissible or probable in physiology when kept within proper limits, that is, when not put in opposition to the doctrine of a purpose involved in the plan of animals, I do not pretend even to conjecture. The question is one which appears to be at present deeply occupying the minds of the most learned and profound physiologists; and such persons alone, adding to their knowledge and zeal, judicial sagacity and impartiality, can tell us what is the general tendency of the best researches on this subject.‡ But when the anatomist expresses such opinions, and defends them by such illustrations as those which I have just quoted,§ we perceive that he quits the entrenchments of his superior science, in which he might have remained unassailable so long as the question was a professional one; and the discussion is open to those who possess no peculiar knowledge of anatomy. We shall, therefore, venture to say a few words upon it.

Estimate of this Doctrine.—It has been so often repeated, and so generally allowed in modern times, that final causes ought not to be made our guides in natural philosophy, that a prejudice has been established against the introduction of any views to which this designation can be applied, into physical speculations. Yet, in fact, the assumption of an end or purpose in the structure of organized beings, appears to be an intellectual habit which no efforts can cast off. It has prevailed from the earliest to the latest

* "Je me garde de prêter à Dieu aucune intention." Phil. Zool. p 10.

† "Je ne connais point d'animal qui doive jouer un rôle dans la nature," p. 65.

‡ So far as this doctrine is generally accepted among the best physiologists, we cannot doubt the propriety of Meckel's remarks, (Comparative Anatomy, 1821, Pref. p. xi.) that it cannot be truly asserted either to be new, or to be peculiarly due to Geoffroy Saint-Hilaire.

§ It is hardly worth while answering such illustrations, but I may remark that the one quoted above, irrelevant and unbecoming as it is, tells [illegible] against its author. The fact that the wooden leg is of the same length as the other, proves, and would satisfy the most incredulous [illegible] was *intended* for walking.

But still, though this organization, in the abundance and diversity of its parts, approaches that of vertebrate animals, it had not been considered as composed in the same manner, or arranged in the same order. Cuvier had always maintained that the plan of molluscs is not a continuation of the plan of vertebrates.

MM. Laurencet and Meyranx, on the contrary, conceived that the sepia might be reduced to the type of a vertebrate creature, by considering the back-bone of the latter bent double backwards, so as to bring the root of the tail to the nape of the neck; the parts thus brought into contact being supposed to coalesce. By this mode of conception, these anatomists held that the viscera were placed in the same connexion as in the vertebrate type, and the functions exercised in an analogous manner.

To decide on the reality of the analogy thus asserted, clearly belonged to the jurisdiction of the most eminent anatomists and physiologists. The Memoir was committed to Geoffroy Saint-Hilaire and Latreille, two eminent zoologists, in order to be reported on. Their report was extremely favourable; and went almost to the length of adopting the views of the authors.

Cuvier expressed some dissatisfaction with this report on its being read;* and a short time afterwards,† represented Geoffroy Saint-Hilaire as having asserted that the new views of Laurencet and Meyranx refuted completely the notion of the great interval which exists between molluscous and vertebrate animals. Geoffroy protested against such an interpretation of his expressions; but it soon appeared, by the controversial character which the discussions on this and several other subjects assumed, that a real opposition of opinions was in action.

Without attempting to explain the exact views of Geoffroy, (we may, perhaps, venture to say that they are hardly yet generally understood with sufficient distinctness to justify the mere historian of science in attempting such an explanation,) their general tendency may be sufficiently collected from what has been said; and from the phrases in which his views are conveyed.‡ *The principle of connexions, the elective affinities of organic elements, the equilibrization of organs;*—such are the designations of the leading doctrines which are unfolded in the preliminary discourse of his *Anatomical Philosophy.* Elective affinities of organic elements are the forces by which the vital structures and varied forms of living things are produced; and the principles of connexion and equilibrium of these forces in the various parts of the organization, prescribe limits and conditions to the variety and developement of such forms.

The character and tendency of this philosophy will be, I think, much more clear, if we consider what it excludes and denies. It rejects altogether all conception of a plan and purposes in the organs of animals, as a principle which has determined their forms, or can be of use in directing our reasonings. "I take care," says

* Phil. Zool. p. 6. † Ibid. p. 50. ‡ id. p.

Geoffroy,* "not to ascribe to God any intention." And when Cuvier speaks of the combination of organs in such order that they may be in consistence with the part which the animal *has to play* in nature; his rival rejoins,† "I know nothing of animals which *have to play* a part in nature." Such a notion is, he holds, unphilosophical and dangerous. It is an abuse of final causes which makes the cause to be engendered by the effect. And to illustrate still further his own view, he says, "I have read concerning fishes, that because they live in a medium which resists more than air, their motive forces are calculated so as to give them the power of progression under those circumstances. By this mode of reasoning, you would say of a man who makes use of crutches, that he was originally destined to the misfortune of having a leg paralyzed or amputated."

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ages of zoological research; appears to be fastened upon us alike by our ignorance and our knowledge; and has been formally accepted by so many great anatomists, that we cannot feel any scruple in believing the rejection of it to be a superstition of a false philosophy, and a result of the exaggeration of other principles which are supposed capable of superseding its use. And the doctrine of unity of plan of all animals, and the other principles associated with this doctrine, so far as they exclude the conviction of an intelligible scheme and a discoverable end, in the organization of animals, appear to be utterly erroneous. I will offer a few reasons for an opinion which may appear presumptuous in a writer who has only a general knowledge of the subject.

1. In the first place, it appears to me that the argumentation on the case in question, the sepia, does by no means turn out to the advantage of the new hypothesis. The arguments in support of the hypothetical view of the structure of this mollusc were, that by this view the relative position of the parts was explained, and conformations which had appeared altogether anomalous, were reduced to rule; for example, the beak, which had been supposed to be in a position the reverse of all other beaks, was shown, by the assumed posture, to have its upper mandible longer than the lower, and thus to be regularly placed. "But," says Cuvier,* "supposing the posture, in order that the side on which the funnel of the sepia is folded should be the back of the animal, considered as similar to a vertebrate, the brain with regard to the beak, and the œsophagus with regard to the liver, should have positions corresponding to those in vertebrates; but the positions of these organs are exactly contrary to hypothesis. How, then, can you say," he asks, "that the cephalopods and vertebrates have *identity of composition, unity of composition*, without using words in a sense entirely different from their common meaning?"

This argument appears to be exactly of the kind on which the value of the hypothesis must depend.† It is, therefore, interesting to see the reply made to it by the theorist. It is this: "I admit the facts here stated, but I deny that they lead to the notion of a different sort of animal composition. Molluscous animals had been placed too high in the zoological scale; but if they are only the embryos of its lower stages, if they are only beings in which far fewer organs come into play, it does not follow that the organs

* G. S. H. Phil. Zool., p. 70.

† I do not dwell on other arguments which were employed. It was given as a circumstance suggesting the supposed posture of the type, that in this way the back was coloured, and the belly was white. On this Cuvier observes, (Phil. Zool. p. 39, 68.) "I must say, that I do not know any naturalist so ignorant as to suppose that the back is determined by its dark colour, or even by its position when the animal is in motion; they all know that the badger has a black belly and a white back; that an infinity of other animals, especially among insects, are in the same case; and that many fishes swim on their side, or with their belly upwards."

are destitute of the relations which the power of successive generations may demand. The organ A will be in an unusual relation with the organ C, if B has not been produced;—if a stoppage of the developement has fallen upon this latter organ, and has thus prevented its production. And thus," he says, "we see how we may have different arrangements, and diverse constructions as they appear to the eye."

It seems to me that such a concession as this entirely destroys the theory which it attempts to defend; for what arrangement does the principle of unity of composition *exclude*, if it admits unusual, that is, various arrangements of some organs, accompanied by the total absence of others? Or how does this differ from Cuvier's mode of stating the conclusion, except in the introduction of certain arbitrary hypotheses of developement and stoppage. "I reduce the facts," Cuvier says, "to their true expression, by saying that cephalopods have several organs which are common to them and vertebrates, and which discharge the same offices; but that these organs are in them differently distributed, and often constructed in a different manner; and they are accompanied by several other organs which vertebrates have not; while these on the other hand have several which are wanting in cephalopods."

We shall see afterwards the general principles which Cuvier himself considered as the best guides in these reasonings. But I will first add a few words on the disposition of the school now under consideration, to reject all assumption of an end.

2. That the parts of the bodies of animals are made in order to discharge their respective offices, is a conviction which we cannot believe to be otherwise than an irremovable principle of the philosophy of organization, when we see the manner in which it has constantly forced itself upon the minds of zoologists and anatomists in all ages; not only as an inference, but as a guide whose indications they could not help following. I have already noticed expressions of this conviction in some of the principal persons who occur in the history of physiology, as Galen and Harvey. I might add many more, but I will content myself with adducing a contemporary of Geoffroy's, whose testimony is the more remarkable, because he obviously shares with his countryman in the common prejudice against the use of final causes. "I consider," he says, in speaking of the provisions for the reproduction of animals,* "with the great Bacon, the philosophy of final causes as sterile; but I have elsewhere acknowledged that it was very difficult for the most cautious man never to have recourse to them in his explanations." After the survey which we have had to take of the history of physiology, we cannot but see that the assumption of final causes in this branch of science is so far from being sterile, that it has had a large share in every discovery which is included in the existing mass of real knowledge. The use of every organ has been discovered by starting from the assumption that it must have *some* use. The doctrine of the circulation of the blood was, as we have seen, clearly and

* *Cabanis*, Rapports du Physique et du Morale de l'Homme, i. 299.

professedly due to the persuasion of a purpose in the circulatory apparatus. The study of comparative anatomy is the study of the adaptation of animal structures to their purposes. And we shall soon have to show that this conception of final causes has, in our own times, been so far from barren, that it has, in the hands of Cuvier and others, enabled us to become intimately acquainted with vast departments of zoology to which we have no other mode of access. It has placed before us in a complete state, animals, of which, for thousands of years, only a few fragments have existed, and which differ widely from all existing animals; and it has given birth, or at least has given the greatest part of its importance and interest, to a science which forms one of the brightest parts of the modern progress of knowledge. It is, therefore, very far from being a vague and empty assertion, when we say that final causes are a real and indestructible element in zoological philosophy; and that the exclusion of them, as attempted by the school of which we speak, is a fundamental and most mischievous error.

3. Thus, though the physiologist may persuade himself that he ought not to refer to final causes, we find that, practically, he cannot help it; and that the event shows that his practical habit is right and well-founded. But he may still cling to the speculative difficulties and doubts in which such subjects may be involved by *à priori* considerations. He may say, as Saint-Hilaire does say,* "I ascribe no intention to God, for I mistrust the feeble powers of my reason. I observe facts merely, and go no further. I only pretend to the character of the historian of *what is*." "I cannot make nature an intelligent being who does nothing in vain, who acts by the shortest mode, who does all for the best."

I am not going to enter at any length into this subject, which, thus considered, is metaphysical and theological, rather than physiological. If any one maintain, as some have maintained, that no manifestation of means apparently used for ends in nature, *can* prove the existence of design in the Author of nature, this is not the place to refute such an opinion in its general form. But I think it may be worth while to show, that even those who incline to such an opinion, still cannot resist the necessity which compels men to assume, in organized beings, the existence of an end.

Among the philosophers who have referred our conviction of the being of God to our moral nature, and have denied the possibility of demonstration on mere physical grounds, Kant is perhaps the most eminent. Yet he has asserted the reality of such a principle of physiology as we are now maintaining in the most emphatic manner. Indeed, this assumption of an end makes his very definition of an organized being. "An organized product of nature is that in which all the parts are mutually ends and means."† And this, he says, is a universal and necessary maxim. He adds, "It is well known that the anatomisers of plants and animals, in order to investigate their structure, and to obtain an insight into the grounds

* Phil. Zool. p. 10. † Urtheilskraft, p. 296.

why and to what end such parts, why such a situation and connexion of the parts, and exactly such an internal form, come before them, assume, as indispensably necessary, this maxim, that in such a creature nothing is *in vain*, and proceed upon it in the same way in which in general natural philosophy we proceed upon the principle that *nothing happens by chance*. In fact, they can as little free themselves from this teleological principle as from the general physical one; for as, on omitting the latter, no experience would be possible, so on omitting the former principle, no clue could exist for the observation of a kind of natural objects which can be considered telcologically under the conception of natural ends."

Even if the reader should not follow the reasoning of this celebrated philosopher, he will still have no difficulty in seeing that he asserts, in the most distinct manner, that which is denied by the author whom we have before quoted, the propriety and necessity of assuming the existence of an end as our guide in the study of animal organization.

4. It appears to me, therefore, that whether we judge from the arguments, the results, the practice of physiologists, their speculative opinions, or those of the philosophers of a wider field, we are led to the same conviction, that in the organized world we may and must adopt the belief, that organization exists for its purpose, and that the apprehension of the purpose may guide us in seeing the meaning of the organization. And I now proceed to show how this principle has been brought into additional clearness and use by Cuvier.

In doing this, I may, perhaps, be allowed to make a reflection of a kind somewhat different from the preceding remarks, though suggested by them. In another work,* I endeavoured to show that those who have been discoverers in science have generally had minds, the disposition of which was to believe in an intelligent Maker of the universe; and that the scientific speculations which produced an opposite tendency, were generally those which, though they might deal familiarly with known physical truths, and conjecture boldly with regard to the unknown, did not add to the number of solid generalizations. In order to judge whether this remark is distinctively applicable in the case now considered, I should have to estimate Cuvier in comparison with other physiologists of his time, which I do not presume to do. But I may observe, that he is allowed by all to have established, on an indestructible basis, many of the most important generalizations which zoology now contains; and the principal defect which his critics have pointed out, has been, that he did not generalize still more widely and boldly. It appears, therefore, that he cannot but be placed among the great discoverers in the studies which he pursued; and this being the case, those who look with pleasure on the tendency of the thoughts of the greatest men to an Intelligence far higher than their own,

* *Bridge*water Treatise, Book iii. Chap. vii. and viii. On Inductive *Habits of Thought*, and On Deductive Habits of Thought.

must be gratified to find that he was an example of this tendency; and that the acknowledgment of a creative purpose, as well as a creative power, not only entered into his belief, but made an indispensable and prominent part of his philosophy.

Doctrine of Final Causes.—We have now to describe more in detail the doctrine which Cuvier maintained in opposition to such opinions as we have been speaking of; and which, in his way of applying it, we look upon as a material advance in physiological knowledge, and therefore give to it a distinct place in our history. "Zoology has," he says,* in the outset of his Règne Animal, "a principle of reasoning which is peculiar to it, and which it employs with advantage on many occasions: this is the principle of *the conditions of existence*, vulgarly called the principle of *final causes*. As nothing can exist if it do not combine all the conditions which render its existence possible, the different parts of each being must be co-ordinated in such a manner as to render the total being possible, not only in itself, but in its relations to those which surround it; and the analysis of these conditions often leads to general laws as clearly demonstrated as those which result from calculation or from experience."

This is the enunciation of his leading principle in general terms. To our ascribing it to him, some may object, on the ground of its being self-evident in its nature,† and having been very anciently applied. But to this we reply, that the principle must be considered as a real discovery, in the hands of him who first shows how to make it an instrument of other discoveries. It is true in other cases as well as in this, that some vague apprehension of true general principles, such as *à priori* considerations can supply, has long preceded the knowledge of them as real and verified laws. In such a way it was seen, before Newton, that the motions of the planets must result from attraction; and before Dufay and Franklin, it was held that electrical actions must result from a fluid. Cuvier's merit consisted, not in seeing that an animal cannot exist without combining all the conditions of its existence; but in perceiving that this truth may be taken as a guide in our researches concerning animals;—that the mode of their existence may be collected from one part of their structure, and then applied to interpret or detect another part. He went on the supposition not only that animal forms have *some* plan, *some* purpose, but that they have an intelligible plan, a discoverable purpose. He proceeded in his investigations like the decipherer of a manuscript, who makes out his alphabet from one part of the context, and then applies it to read the rest. The proof that his principle was something very different from an identical proposition, is to be found in the fact, that it enabled him to understand and arrange the structures of animals with unprecedented clearness and completeness of order; and to restore the forms of the extinct animals which are found in the rocks of the earth, in a

* Regne An. p. 6. † Swainson, Study of Nat. Hist. p. 85.

manner which has been universally assented to as irresistibly convincing. These results cannot flow from a trifling or barren principle; and they show us that if we are disposed to form such a judgment of Cuvier's doctrine, it must be because we do not fully apprehend its import.

To illustrate this, we need only quote the statement which he makes, and the uses to which he applies it. Thus in the Introduction to his great work on "Fossil Remains," he says, "Every organized being forms an entire system of its own, all the parts of which mutually correspond, and concur to produce a certain definite purpose by reciprocal reaction, or by combining to the same end. Hence none of these separate parts can change their forms, without a corresponding change in the other parts of the same animal; and consequently each of these parts, taken separately, indicates all the other parts to which it has belonged. Thus, if the viscera of an animal are so organized as only to be fitted for the digestion of recent flesh, it is also requisite that the jaws should be so constructed as to fit them for devouring prey; the claws must be constructed for seizing and tearing it in pieces; the teeth for cutting and dividing its flesh; the entire system of the limbs or organs of motion for pursuing and overtaking it; and the organs of sense for discovering it at a distance. Nature must also have endowed the brain of the animal with instincts sufficient for concealing itself, and for laying plans to catch its necessary victims."* By such considerations he has been able to reconstruct the whole of many animals of which parts only were given;—a positive result, which shows both the reality and the value of the truth on which he wrought.

Another great example, equally showing the immense importance of this principle in Cuvier's hands, is the reform which, by means of it, he introduced into the classification of animals. Here again we may quote the view he himself has given† of the character of his own improvements. In studying the physiology of the natural classes of vertebrate animals, he found, he says, "in the respective quantity of their respiration, the reason of the quantity of their motion, and consequently of the kind of locomotion. This, again, furnishes the reason for the forms of their skeletons and muscles; and the energy of their senses, and the force of their digestion, are in a necessary proportion to the same quantity. Thus a division which had till then been established, like that of vegetables, only upon observation, was found to rest upon causes appreciable, and applicable to other cases." Accordingly, he applied this view to invertebrates;—examined the modifications which take place in their organs of circulation, respiration, and sensation; and having calculated the necessary results of these modifications, he deduced from it a new division of those animals, in which they are arranged according to their true relations.

Such have been some of the results of the principle of the conditions of existence, as applied by its great assertor.

* *Theory* of the Earth, p. 90. † Hist. S. C. Nat. i, 293.

It is clear, indeed, that such a principle could acquire its practical value only in the hands of a person intimately acquainted with anatomical details, with the functions of the organs, and with their variety in different animals. It is only by means of such nutriment that the embryo truth could be developed into a vast tree of science. But it is not the less clear, that Cuvier's immense knowledge and great powers of thought led to their results, only by being employed under the guidance of this master-principle: and, therefore, we may justly consider it as the distinctive feature of his speculations, and follow it with a gratified eye, as the thread of gold which runs through, connects, and enriches his zoological researches:—gives them a deeper interest and a higher value than can belong to any view of the organical sciences, in which the very essence of organization is kept out of view.

The real philosopher, who knows that all the kinds of truth are intimately connected, and that all the best hopes and encouragements which are granted to our nature must be consistent with truth, will be satisfied and confirmed, rather than surprised and disturbed, thus to find the natural sciences leading him to the borders of a higher region. To him it will appear natural and reasonable, that, after journeying so long among the beautiful and orderly laws by which the universe is governed, we find ourselves at last approaching to a source of order and law, and intellectual beauty: —that, after venturing into the region of life and feeling and will, we are led to believe the fountain of life and will, not to be itself unintelligent and dead, but to be a living mind, a power which aims as well as acts. To us this doctrine appears like the natural cadence of the tones to which we have so long been listening; and without such a final strain our ears would have been left craving and unsatisfied. We have been lingering long amid the harmonies of law and symmetry, constancy and developement; and these notes, though their music was sweet and deep, must too often have sounded to the ear of our moral nature, as vague and unmeaning melodies, floating in the air around us, but conveying no definite thought, moulded into no intelligible announcement. But one passage which we have again and again caught by snatches, though sometimes interrupted and lost, at last swells in our ears full, clear, and decided; and the religious "Hymn in honour of the Creator," to which Galen so gladly lent his voice, and in which the best physiologists of succeeding times have ever joined, is filled into a richer and deeper harmony by the greatest philosophers of these later days, and will roll on hereafter, the "perpetual song" of the temple of science.

QUESTION OF THE TRANSMUTATION OF SPECIES.

* Besides the fortunes of individual plants and animals, of which the geologist has traces brought under his notice, there is another

* Hist. Ind. Sc. Book xviii. Chap. vi. Sect. 2, 3, 4.

class of questions, of great interest, but of great difficulty;—the fortunes of each species. In what manner do species which were not, begin to be? as geology teaches us that they many times have done; and, as even our own reasonings convince us they must have done, at least in the case of the species among which we live.

We here obviously place before us, as a subject of research, the creation of living things;—a subject shrouded in mystery, and not to be approached without reverence. But though we may conceive, that, on this subject, we are not to seek our belief from science alone, we shall find, it is asserted, within the limits of allowable and unavoidable speculation, many curious and important problems which may well employ our physiological skill. For example, we may ask:—how we are to recognise the species which were originally created distinct?—whether the population of the earth at one geological epoch could pass to the form which it has at a succeeding period, by the agency of natural causes alone?—and if not, what other account we can give of the succession which we find to have taken place?

The most remarkable point in the attempts to answer these and the like questions, is the controversy between the advocates and the opponents of the doctrine of the *transmutation of species*. This question is, even from its mere physiological import, one of great interest; and the interest is much enhanced by our geological researches, which again bring the question before us in a striking form, and on a gigantic scale. We shall, therefore, briefly state the point at issue.

We see that animals and plants may, by the influence of breeding, and of external agents operating upon their constitution, be greatly modified, so as to give rise to varieties and races different from what before existed. How different, for instances, is one kind and breed of dog from another! The question, then, is, whether organized beings can, by the mere working of natural causes, pass from the type of one species to that of another! whether the wolf may, by domestication, become the dog! whether the ourang-outang may, by the power of external circumstances, be brought within the circle of the human species! And the dilemma in which we are placed is this;—that if species are not thus interchangeable, we must suppose the fluctuations of which each species is capable, and which are apparently indefinite, to be bounded by rigorous limits; whereas, if we allow such a *transmutation of species*, we abandon that belief in the adaptation of the structure of every creature to its destined mode of being, which not only most persons would give up with repugnance, but which, as we have seen, has constantly and irresistibly impressed itself on the minds of the best naturalists, as the true view of the order of the world.

The question, of the limited or unlimited extent of the modifications of animals and plants, has received full and careful consideration from eminent physiologists: and in their opinions we find, I *think*, an indisputable preponderance to that decision which rejects *the transmutation* of species, and which excepts the former side of

the dilemma; namely, that the changes of which each species is susceptible, though difficult to define in words, are limited in fact. It is extremely interesting and satisfactory thus to receive an answer in which we can confide, to inquiries seemingly so wide and bold as those which this subject involves. I refer to Mr. Lyell, Dr. Prichard, Mr. Lawrence, and others, for the history of the discussion, and for the grounds of the decision; and I shall quote very briefly the main points and conclusions to which the inquiry has led.*

It may be considered, then, as determined by the over-balance of physiological authority, that there is a capacity in all species to accommodate themselves, to a certain extent, to a change of external circumstances; this extent varying greatly according to the species. There may thus arise changes of appearance or structure, and some of these changes are transmissible to the offspring: but the mutations thus superinduced are governed by constant laws, and confined within certain limits. Indefinite divergence from the original type is not possible; and the extreme limit of possible variation may usually be reached in a short period of time: in short, *species have a real existence in nature*, and a transmutation from one to another does not exist.

Thus, for example, Cuvier remarks,† that notwithstanding all the differences of size, appearance, and habits, which we find in the dogs of various races and countries, and though we have (in the Egyptian mummies) skeletons of this animal as it existed three thousand years ago, the relation of the bones to each other remains essentially the same; and, with all the varieties of their shape and size, there are characters which resist all the influences both of external nature, of human intercourse, and of time.

HYPOTHESIS OF PROGRESSIVE TENDENCIES.

Within certain limits, however, as we have said, external circumstances produce changes in the forms of organized beings. The causes of change, and the laws and limits of their effects, as they obtain in the existing state of the organic creation, are in the highest degree interesting. And, as has been already intimated, the knowledge thus obtained has been applied with a view to explain the origin of the existing population of the world, and the succession of its past conditions. But those who have attempted such an explanation, have found it necessary to assume certain additional laws, in order to enable themselves to deduce, from the tenet of the transmutability of the species of organized beings, such a state of things as we see about us, and such a succession of states as is evidenced by geological researches. And here, again, we are brought to questions of which we must seek the answers from the most profound physiologists. Now referring, as before, to those which appear to be the best authorities, it is found that these addi-

* Lyell, B. ii. c. iv. † Ossem. Foss. Disc. Prél. p. 61.

tional positive laws are still more inadmissible than the primary assumption of indefinite capacity of change. For example, in order to account, on this hypothesis, for the seeming adaptation of the endowments of animals to their wants, it is held that the endowments are the result of the wants;—that the swiftness of the antelope, the claws and teeth of the lion, the trunk of the elephant, the long neck of the giraffe, have been produced by a certain plastic character in the constitution of animals, operated upon, for a long course of ages, by the attempts which these animals made to attain objects which their previous organization did not place within their reach. In this way, it is maintained that the most striking attributes of animals, those which apparently imply most clearly the providing skill of their Creator, have been brought forth by the long-repeated efforts of the creatures to attain the object of their desires; thus animals with the highest endowments have been gradually developed from ancestral forms of the most limited organization: thus fish, birds, and beasts, have grown from *small gelatinous bodies*, "petits corps gelatineux," possessing some obscure principle of life, and the capacity of developement; and thus man himself, with all his intellectual and moral, as well as physical privileges, has been derived from some creature of the ape or baboon tribe, urged by a constant tendency to improve, or at least to alter his condition.

As we have said, in order to arrive, even hypothetically, at this result, it is necessary to assume, besides a mere capacity for change, other positive and active principles, some of which we may notice. Thus, we must have, as the direct productions of nature on this hypothesis, certain monads or rough draughts, the primary *rudiments* of plants and animals. We must have, in these, a constant *tendency to progressive improvement*, to the attainment of higher powers and faculties than they possess; which tendency is again perpetually modified and controlled by the *force of external circumstances*. And in order to account for the simultaneous existence of animals in every stage of this imaginary progress, we must suppose that nature is compelled to be *constantly* producing those elementary beings, from which all animals are successively developed.

I need not stay to point out how extremely arbitrary every part of this scheme is; and how complex its machinery would be, even if it did account for the facts. It may be sufficient to observe, as others have done,* that the capacity of change, and of being influenced by external circumstances, such as we really find it in nature, and therefore such as in science we must represent it, is a tendency, not to improve, but to deteriorate. When species are modified by external causes, they usually degenerate, and do not advance. And there is no instance of a species acquiring an entirely new sense, faculty, or organ, in addition to, or in the place of, what it had before.

Not only, then, is the doctrine of the transmutation of species

* Lyell, Book iii. Chap. i. p. 413.

in itself disproved by the best physiological reasonings, but the additional assumptions which are requisite, to enable its advocates to apply it to the explanation of the geological and other phenomena of the earth, are altogether gratuitous and fantastical.

Such is the judgment to which we are led by the examination of the discussions which have taken place on this subject. Yet in certain speculations, occasioned by the discovery of the *Sivatherium*, a new fossil animal from the Sub-Himalaya mountains of India, M. Geoffroy Saint-Hilaire speaks of the belief in the immutability of species as a conviction which is fading away from men's minds. He speaks too of the termination of the age of Cuvier, "la clôture du siècle de Cuvier," and of the commencement of a better zoological philosophy.* But though he expresses himself with great animation, I do not perceive that he adduces, in support of his peculiar opinions, any arguments in addition to those which he urged during the lifetime of Cuvier. And the reader† may recollect that the consideration of that controversy led us to very different anticipations from his, respecting the probable future progress of physiology. The discovery of the Sivatherium supplies no particle of proof to the hypothesis, that the existing species of animals are descended from extinct creatures which are specifically distinct: and we cannot act more wisely than in listening to the advice of that eminent naturalist, M. de Blainville.‡ "Against this hypothesis, which up to the present time, I regard as purely gratuitous, and likely to turn geologists out of the sound and excellent road in which they now are, I willingly raise my voice, with the most absolute conviction of being in the right."

GEOLOGY.

THE QUESTION OF CREATION AS RELATED TO SCIENCE.

§ THE study of geology opens to us the spectacle of many groups of species which have, in the course of the earth's history, succeeded each other at vast intervals of time; one set of animals and plants disappearing, as it would seem, from the face of our planet, and others, which did not before exist, becoming the only occupants of the globe. And the dilemma then presents itself to us anew:— either we must accept the doctrine of the transmutation of species, and must suppose that the organized species of one geological epoch were transmuted into those of another by some long-continued agency of natural causes; or else, we must believe in many successive acts of creation and extinction of species, out of the common

* Compte Rendu de l'Acad. des Sc. 1837, No. 3, p. 81.
† See p. 28. ‡ Compte Rendu, 1837, No. 5, p. 168.
§ Hist. Ind. Sc. Book xviii. Chap. vi. Sect. 5.

course of nature; acts which, therefore, we may properly call miraculous.

But since we reject the production of new species by means of external influence, do we then, it may be asked, accept the other side of the dilemma which we have stated; and admit a series of creations of species, by some power beyond that which we trace in the ordinary course of nature?

To this question, the history and analogy of science, I conceive, teach us to reply as follows:—All palætiological sciences, all speculations which attempt to ascend from the present to the remote past, by the chain of causation, do also, by an inevitable consequence, urge us to look for the beginning of the state of things which we thus contemplate; but in none of these cases have men been able, by the aid of science, to arrive at a beginning which is homogeneous with the known course of events. The first origin of language, of civilization, of law and government, cannot be clearly made out by reasoning and research; and just as little, we may expect, will a knowledge of the origin of the existing and extinct species of plants and animals, be the result of physiological and geological investigation.

But, though philosophers have never yet demonstrated, and perhaps never will be able to demonstrate, what was that primitive state of things in the social and material worlds, from which the progressive state took its first departure; they can still, in all the lines of research to which we have referred, go very far back;—determine many of the remote circumstances of the past sequence of events;—ascend to a point which, from our position at least, seems to be near the origin;—and exclude many suppositions respecting the origin itself. Whether, by the light of reason alone, men will ever be able to do more than this, it is difficult to say. It is, I think, no irrational opinion, even on grounds of philosophical analogy alone, that in all those sciences which look back and seek a beginning of things, we may be unable to arrive at a consistent and definite belief, without having recourse to other grounds of truth, as well as to historical research and scientific reasoning. When our thoughts would apprehend steadily the creation of things, we find that we are obliged to summon up other ideas than those which regulate the pursuit of scientific truths;—to call in other powers than those to which we refer natural events: it cannot, then, be considered as very surprising, if, in this part of our inquiry, we are compelled to look for other than the ordinary evidence of science.

Geology, forming one of the palætiological class of sciences, which trace back the history of the earth and its inhabitants on philosophical grounds, is thus associated with a number of other kinds of research, which are concerned about language, law, art, and consequently about the internal faculties of man, his thoughts, his social habits, his conception of right, his love of beauty. Geology being thus brought into the atmosphere of moral and *mental speculations*, it may be expected that her investigations of

the probable past will share an influence common to them; and that she will not be allowed to point to an origin of her own, a merely physical beginning of things; but that, as she approaches towards such a goal, she will be led to see that it is the origin of many trains of events, the point of convergence of many lines. It may be, that instead of being allowed to travel up to this focus of being, we are only able to estimate its place and nature, and to form of it such a judgment as this;—that it is not only the source of mere vegetable and animal life, but also of rational and social life, language and arts, law and order; in short, of all the progressive tendencies by which the highest principles of the intellectual and moral world have been and are developed, as well as of the succession of organic forms, which we find scattered, dead or living, over the earth.

This reflection concerning the natural scientific view of creation, it will be observed, has not been sought for from a wish to arrive at such conclusions; but it has flowed spontaneously from the manner in which we have had to introduce geology into our classification of the sciences: and this classification was framed from an unbiassed consideration of the general analogies and guiding ideas of the various portions of our knowledge. Such remarks as we have made may on this account be considered more worthy of attention.

But such a train of thought must be pursued with caution. Although it may not be possible to arrive at a right conviction respecting the origin of the world, without having recourse to other than physical considerations, and to other than geological evidence, yet extraneous considerations, and extraneous evidence, respecting the nature of the beginning of things, must never be allowed to influence our physics or our geology. Our geological dynamics, like our astronomical dynamics, may be inadequate to carry us back to an origin of that state of things of which it explains the progress, but this deficiency must be supplied, not by adding supernatural to natural geological dynamics, but by accepting, in their proper place, the views supplied by a portion of knowledge of a different character and order. If we include in theology the speculations to which we have recourse for this purpose, we must exclude them from geology. The two sciences may conspire, not by having any part in common, but because, though widely diverse in their lines, both point to a mysterious and invisible origin of the world.

All that which claims our assent on those higher grounds of which theology takes cognizance, must claim such assent as is consistent with those grounds; that is, it must require belief in respect of all that bears upon the highest relations of our being, those on which depend our duties and our hopes. Doctrines of this kind may and must be conveyed and maintained, by means of information concerning the past history of man, and his social and material, as well as moral and spiritual fortunes. He who believes hat a Providence has ruled the affairs of mankind, will also believe

that a Providence has governed the material world. But any language in which the narrative of this government of the material world can be conveyed, must necessarily be very imperfect and inappropriate; being expressed in terms of those ideas which have been selected by men, in order to describe the appearances and relations of created things as they affect one another. In all cases, therefore, where we have to attempt to interpret such a narrative, we must feel that we are extremely liable to err; and most of all, when our interpretation refers to those material objects and operations which are most foreign to the main purpose of a history of providence. If we have to consider a communication containing a view of such a government of the world, imparted to us, as we may suppose, in order to point out the right direction for our feelings of trust, and reverence, and hope, towards the Governor of the world, we may expect that we shall be in no danger of collecting from our authority erroneous notions with regard to the power, and wisdom, and goodness of His government; or with respect to our own place, duties, and prospects, and the history of our race, so far as our duties and prospects are concerned. But that we should rightly understand the detail of all events in the history of man, or of the skies, or of the earth, which are narrated for the purpose of thus giving a right direction to our minds, is by no means equally certain; and I do not think it would be too much to say, that an immunity from perplexity and error, in such matters, is, on general grounds, very improbable. It cannot then surprise us to find, that parts of such narrations which seem to refer to occurrences like those of which astronomers and geologists have attempted to determine the laws, have given rise to many interpretations, all inconsistent with one another, and most of them at variance with the best established principles of astronomy and geology.

It may be urged, that all truths must be consistent with all other truths, and that therefore the results of true geology or astronomy cannot be irreconcilable with the statements of true theology. And this universal consistency of truth with itself must be assented to; but it by no means follows that we must be able to obtain a full insight into the nature and manner of such a consistency. Such an insight would only be possible if we could obtain a clear view of that central body of truth, the source of the principles which appear in the separate lines of speculation. To expect that we should see clearly how the providential government of the world is consistent with the unvarying laws by which its motions and developements are regulated, is to expect to understand thoroughly the laws of motion, of developement, and of providence; it is to expect that we may ascend from geology and astronomy to the creative and legislative centre, from which proceeded earth and stars; and then descend again into the moral and spiritual world, because its source and centre are the same as those of the material creation. It is to say that reason, whether finite or infinite, must be consistent with itself; and that, therefore, the finite must be *able to com*prehend the infinite, to travel from any one province of

the moral and material universe to any other, to trace their bearing, and to connect their boundaries.

One of the advantages of the study of the history and nature of science in which we are now engaged is, that it warns us of the hopeless and presumptuous character of such attempts to understand the government of the world by the aid of science, without throwing any discredit upon the reality of our knowledge;—that while it shows how solid and certain each science is, so long as it refers its own facts to its own ideas, it confines each science within its own limits, and condemns it as empty and helpless, when it pronounces upon those subjects which are extraneous to it. The error of persons who should seek a geological narrative in theological records, would be rather in the search itself than in their interpretation of what they might find; and in like manner the error of those who would conclude against a supernatural beginning, or a providential direction of the world, upon geological or physiological reasonings, would be, that they had expected those sciences alone to place the origin or the government of the world in its proper light.

Though these observations apply generally to all the palætiological sciences, they may be permitted here, because they have an especial bearing upon some of the difficulties which have embarrassed the progress of geological speculation; and though such difficulties are, I trust, nearly gone by, it is important for us to see them in their true bearing.

From what has been said, it follows that geology and astronomy are, of themselves, incapable of giving us any distinct and satisfactory account of the origin of the universe, or of its parts. We need not wonder, then, at any particular instance of this incapacity; as for example, that of which we have been speaking, the impossibility of accounting by any natural means for the production of all the successive tribes of plants and animals which have peopled the world in the various stages of its progress, as geology teaches us. That they were, like our own animal and vegetable contemporaries, profoundly adapted to the condition in which they were placed, we have ample reason to believe; but when we inquire whence they came into this our world, geology is silent. The mystery of creation is not within the range of her legitimate territory; she says nothing, but she points upwards.

THE PHILOSOPHY OF BIOLOGY.

THE IDEA OF FINAL CAUSES.

*1. By an examination of those notions which enter into all our reasonings and judgments on living things, it appears that we con-

* Müller, Elem., p. 18.

ceive animal life as a vortex or cycle of moving matter in which the form of the vortex determines the motions, and these motions again support the form of the vortex: the stationary parts circulate the fluids, and the fluids nourish the permanent parts. Each portion ministers to the others, each depends upon the other. The parts make up the whole, but the existence of the whole is essential to the preservation of the parts. But parts existing under such conditions are *organs*, and the whole is *organized*. This is the fundamental conception of organization. "Organized beings," says the physiologist,* "are composed of a number of essential and mutually dependent parts." "An organized product of nature," says the great metaphysician,† "is that in which all the parts are mutually ends and means."

2. It will be observed that we do not content ourselves with saying that in such a whole, all the parts are *mutually dependent*. This might be true even of a mechanical structure; it would be easy to imagine a framework in which each part should be necessary to the support of each of the others; for example, an arch of several stones. But in such a structure the parts have no properties which they derive from the whole. They are beams or stones when separate; they are no more when joined. But the same is not the case in an organized whole. The limb of an animal separated from the body, loses the properties of a limb and soon ceases to retain even its form.

3. Nor do we content ourselves with saying that the parts are *mutually causes and effects*. This is the case in machinery. In a clock, the pendulum by means of the escapement causes the descent of the weight, the weight by the same escapement keeps up the motion of the pendulum. But things of this kind may happen by accident. Stones slide from a rock down the side of a hill and cause it to be smooth; the smoothness of the slope causes stones still to slide. Yet no one would call such a slide an organized system. The system is organized, when the effects which take place among the parts are *essential to our conception of the whole*; when the whole would not *be* a whole, nor the parts, parts, except these effects were produced; when the effects not only happen in fact, but are included in the idea of the object; when they are not only seen, but foreseen; not only expected, but intended: in short when, instead of being causes and effects, they are *ends* and *means*, as they are termed in the above definition.

Thus we necessarily include, in our Idea of Organization, the notion of an end, a purpose, a design; or, to use another phrase which has been peculiarly appropriated in this case, a *Final Cause*. This idea of a Final Cause is an essential condition in order to the pursuing our researches respecting organized bodies.

4. This Idea of Final Cause is not deduced from the phenomena by reasoning, but is assumed as the only condition under which we can reason on such subjects at all. We do not deduce the Idea of

* *Kant*, Urtheilskraft, p. 296. † Phil. Ind. Sc. Book ix. Chap. vi.

Space, or Time, or efficient Cause, from the phenomena about us, but necessarily look at phenomena as subordinate to these Ideas from the beginning of our reasoning. It is true, our ideas of relations of Space, and Time, and Force, may become much more clear by our familiarizing ourselves with particular phenomena; but still, the Fundamental Ideas are not generated, but unfolded; not extracted from the external world, but evolved from the world within. In like manner, in the contemplation of organic structures, we consider each part as subservient to some use, and we cannot study the structure as organic without such a conception. This notion of adaptation,—this Idea of an End,—may become much more clear and impressive by seeing it exemplified in particular cases. But still, though suggested and evoked by special cases, it is not furnished by them. If it be not supplied by the mind itself, it can never be logically deduced from the phenomena. It is not a portion of the facts which we study, but it is a principle which connects, includes, and renders them intelligible; as our other Fundamental Ideas do the classes of facts to which they respectively apply.

5. This has already been confirmed by reference to fact; in the History of Physiology, I have shown that those who studied the structure of animals were irresistibly led to the conviction that the parts of this structure have each its end or purpose;—that each member and organ not merely produces a certain effect or answers a certain use, but is so framed as to impress us with the persuasion that it was constructed *for* that use:—that it was *intended* to produce the effect. It was there seen that this persuasion was repeatedly expressed in the most emphatic manner by Galen;—that it directed the researches and led to the discoveries of Harvey;—that it has always been dwelt upon as a favourite contemplation, and followed as a certain guide, by the best anatomists; and that it is inculcated by the physiologists of the profoundest views and most extensive knowledge of our own time. All these persons have deemed it a most certain and important principle of physiology, that in every organized structure, plant or animal, each intelligible part has its allotted office:—each organ is designed for its appropriate function:—that nature, in these cases, produces nothing in vain: that, in short, each portion of the whole arrangement has its *final cause;* an end to which it is adapted, and in this end, the reason that it is where and what it is.

6. This notion of Design in organized bodies must, I say, be supplied by the student of organization out of his own mind: a truth which will become clearer if we attend to the most conspicuous and acknowledged instances of *design.* The structure of the eye, in which the parts are curiously adjusted so as to produce a distinct image on the retina, as in an optical instrument;—the trochlear muscle of the eye, in which the tendon passes round a support and turns back, like a rope round a pully;—the prospective contrivances for the preservation of animals, provided long before they are wanted, as the milk of the mother, the teeth of the child, the eyes and lungs

of the fœtus:—these arrangements, and innumerable others, call up in us a persuasion that Design has entered into the plan of animal form and progress. And if we bring in our minds this conception of Design, nothing can more fully square with and fit it, than such instances as these. But if we did not already possess the Idea of Design;—if we had not had our notion of mechanical contrivance awakened by inspection of optical instruments, or pulleys, or in some other way;—if we had never been conscious ourselves of providing for the future;—if this were the case, we could not recognise contrivance and prospectiveness in such instances as we have referred to. The facts are, indeed, admirably in accordance with these conceptions, when the two are brought together: but the facts and the conceptions come together from different quarters—from without and from within.

7. We may further illustrate this point by referring to the relations of travellers who tell us that when consummate examples of human mechanical contrivance have been set before savages, they have appeared incapable of apprehending them as proofs of design. This shows that in such cases the Idea of Design had not been developed in the minds of the people who were thus unintelligent: but it no more proves that such an idea does not naturally and necessarily arise, in the progress of men's minds, than the confused manner in which the same savages apprehend the relations of space, or number, or cause, proves that these ideas do not naturally belong to their intellects. All men have these ideas; and it is because they cannot help referring their sensations to such ideas, that they apprehend the world as existing in time and space, and as a series of causes and effects. It would be very erroneous to say that the belief of such truths is obtained by logical reasoning from facts. And in like manner we cannot logically deduce design from the contemplation of organic structures; although it is impossible for us, when the facts are clearly before us, not to find a reference to design operating in our minds.

8. Again; the evidence of the doctrine of Final Causes as a fundamental principle of Biology may be obscured and weakened in some minds by the constant habit of viewing this doctrine with suspicion as unphilosophical and at variance with morphology. By cherishing such views it is probable that many persons, physiologists and others, have gradually brought themselves to suppose that many or most of the arrangements which are familiarly adduced as instances of design may be accounted for, or explained away;—that there is a certain degree of prejudice and narrowness of comprehension in that lively admiration of the adaptation of means to ends which common minds derive from the spectacle of organic arrangements. And yet, even in persons accustomed to these views, the strong and natural influence of the Idea of a Final Cause, the spontaneous recognition of the relation of means to an end as the assumption which makes organic arrangements intelligible, breaks forth when we bring before them a new case, with regard to which their genuine convictions have not yet been modified by their

intellectual habits. I will offer, as an example which may serve to illustrate this, the discoveries recently made with regard to the process of suckling of the kangaroo. In the case of this, as of other pouched animals, the young animal is removed, while very small and imperfectly formed, from the womb to the pouch, in which the teats are, and is there placed with its lips against one of the nipples. But the young animal taken altogether is not so large as the nipple, and is therefore incapable of sucking after the manner of common mammals. Here is a difficulty: how is it overcome?—By an appropriate *contrivance:* the nipple, which in common mammals is not furnished with any muscle, is in the kangaroo provided with a powerful extrusory muscle by which the mother can inject the milk into the mouth of her offspring. And again; in order to give attachment to this muscle there is a bone which is not found in animals of other kinds. But this mode of solving the problem of suckling so small a creature introduces another difficulty. If the milk is injected into the mouth of the young one, without any action of its own muscles, what is to prevent the fluid entering the windpipe and producing suffocation? How is this danger avoided?—By another appropriate *contrivance:* there is a funnel in the back of the throat by which the air-passage is completely separated from the passage for nutriment, and the injected milk passes in a divided stream on each side of the larynx to the œsophagus.* And as if to show that this apparatus is really formed with a view to the wants of the young one, the structure alters in the course of the animal's growth; and the funnel, no longer needed, is modified and disappears.

With regard to this and similar examples, the remark which I would urge is this:—that no one, however prejudiced or unphilosophical he may in general deem the reference to Final Causes, can, at the first impression, help regarding this curious system of arrangement as the means to an end. So contemplated, it becomes significant, intelligible, admirable: without such a principle, it is an unmeaning complexity, a collection of contradictions, producing an almost impossible result by a portentous conflict of chances. The parts of this apparatus cannot have produced one another; one part is in the mother; another part in the young one: without their harmony they could not be effective; but nothing except design can operate to make them harmonious. They are *intended* to work together; and we cannot resist the conviction of this intention when the facts first come before us. Perhaps there may hereafter be physiologists who, tracing the gradual developement of the parts of which we have spoken, and the analogies which connect them with the structures of other animals, may think that this developement, these analogies, account for the conformation we have described; and may hence think lightly of the explanation derived from the reference to Final Causes. Yet surely it is clear, on a calm consideration of the subject, that the latter explanation is not disturbed by the former; and that the observer's first impression,

* Mr. Owen, in Phil. Trans., 1834, p. 348.

that this is "an irrefragable evidence of creative foresight,"* can never be obliterated, however much it may be obscured in the minds of those who confuse this view by mixing it with others which are utterly heterogeneous to it, and therefore cannot be contradictory.

9. I have elsewhere† remarked how physiologists, who thus look with suspicion and dislike upon the introduction of Final Causes into physiology, have still been unable to exclude from their speculations causes of this kind. Thus Cabanis says,‡ "I regard with the great Bacon, the philosophy of Final Causes as sterile; but I have elsewhere acknowledged that it was very difficult for the most cautious man never to have recourse to them in his explanations." Accordingly, he says, "The partisans of Final Causes nowhere find arguments so strong in favour of their way of looking at nature as in the laws which preside and the circumstances of all kinds which concur in the reproduction of living races. In no case do the means employed appear so clearly relative to the end." And it would be easy to find similar acknowledgments, express or virtual, in other writers of the same kind. Thus Bichat, after noting the difference between the organic sensibility by which the organs are made to perform their offices, and the animal sensibility of which the nervous centre is the seat, says,§ "No doubt it will be asked, *why*,"—that is, as we shall see, for what *end*—"the organs of internal life have received from nature an inferior degree of sensibility only, and why they do not transmit to the brain the impressions which they receive, while all the acts of the animal life imply this transmission? The reason is simply this, that all the phenomena which establish our connexions with surrounding objects *ought to be*, and are in fact, under the influence of the will; while all those which serve for the purpose of assimilation only, escape, and *ought* indeed to escape, such influence." The *reason* here assigned is the Final Cause; which, as Bichat justly says, we cannot help asking for.

10. Again; I may quote from the writer last mentioned another remark, which shows that in the organical sciences, and in them alone, the Idea of forces as Means acting to an End, is inevitably assumed and acknowledged as of supreme authority. In Biology alone, observes Bichat,‖ have we to contemplate the state of *disease*. "Physiology is to the movements of living bodies, what astronomy, dynamics, hydraulics, &c., are to those of inert matter: but these latter sciences have no branches which correspond to them as pathology corresponds to physiology. For the same reason all notion of a medicament is repugnant to the physical sciences. A medicament has for its object to bring the properties of the

* Mr. Owen, in Phil. Trans., 1834, p. 349.
† Bridgewater Treatise, p. 352.
‡ Rapports de Physique et du Moral, i. 299.
§ Life and Death, (trans.) p. 32.
‖ Anatomie Generale, i. liij.

system back to their natural type; but the physical properties never depart from this type, and have no need to be brought back to it: and thus there is nothing in the physical sciences which holds the place of therapeutick in physiology." Or, as we might express it otherwise, of inert forces we have no conception of what they *ought to do*, except what they *do*. The forces of gravity, elasticity, affinity, never act in a *diseased* manner; we never conceive them as failing in their purpose; for we do not conceive them as having any purpose which is answered by one mode of their action rather than another. But with organical forces the case is different; they are necessarily conceived as acting for the preservation and developement of the system in which they reside. If they do not do this, they fail, they are deranged, diseased. They have for their object to conform the living being to a certain type; and if they cause or allow it to deviate from this type, their action is distorted, morbid, contrary to the ends of nature. And thus this conception of organized beings as susceptible of disease, implies the recognition of a state of health, and of the organs and the vital forces as means for preserving this normal condition. The state of health and of perpetual developement is necessarily contemplated as the Final Cause of the processes and powers with which the different parts of plants and animals are endowed.

11. This idea of a Final Cause is applicable as a fundamental and regulative idea to our speculations concerning organized creatures only. That there is a purpose in many other parts of the creation, we find abundant reason to believe from the arrangements and laws which prevail around us. But this persuasion is not to be allowed to regulate and direct our reasonings with regard to inorganic matter, of which conception the relation of means and end forms no essential part. In mere Physics, Final Causes, as Bacon has observed, are not to be admitted as a principle of reasoning. But in the organical sciences, the assumption of design and purpose in every part of every whole, that is, the pervading idea of Final Cause, is the basis of sound reasoning and the source of true doctrine.

12. The Idea of Final Cause, of end, purpose, design, intention, is altogether different from the Idea of Cause, as efficient cause, which we formerly had to consider; and on this account the use of the word *Cause* in this phrase has been objected to. If the idea be clearly entertained and steadily applied, the word is a question of subordinate importance. The term Final Cause has been long familiarly used, and appears not likely to lead to confusion.

13. The consideration of Final Causes, both in physiology and in other subjects, has at all times attracted much attention, in consequence of its bearing upon the belief of an Intelligent Author of the Universe. I do not intend, in this place, to pursue the subject far in this view: but there is one antithesis of opinion, already noticed in speaking of Physiology, on which I will again make a few remarks.*

* See p. 25.

It has appeared to some persons that the mere aspect of order and symmetry in the works of nature—the contemplation of comprehensive and consistent law—is sufficient to lead us to the conception of a design and intelligence producing the order and carrying into effect the law. Without here attempting to decide whether this is true, we may discern, after what has been said, that the conception of design, arrived at in this manner, is altogether different from that idea of design which is suggested to us by organized bodies, and which we describe as the doctrine of Final Causes. The regular form of a crystal, whatever beautiful symmetry it may exhibit, whatever general laws it may exemplify, does not prove design in the same manner in which design is proved by the provisions for the preservation and growth of the seeds of plants, and of the young of animals. The law of universal gravitation, however wide and simple, does not impress us with the belief of a purpose, as does that propensity by which the two sexes of each animal are brought together. If it could be shown that the symmetrical structure of a flower results from laws of the same kind as those which determine the regular forms of crystals, or the motions of the planets, the discovery might be very striking and important, but it would not at all come under our idea of Final Cause.

14. Accordingly there have been, in modern times, two different schools of physiologists, the one proceeding upon the idea of Final Causes, the other school seeking in the realm of organized bodies wide laws and analogies from which that idea is excluded. All the great biologists of preceding times, and some of the greatest of modern times, have belonged to the former school; and especially Cuvier, who may be considered as the head of it. It was solely by the assiduous application of this principle of Final Cause, as he himself constantly declared, that he was enabled to make the discoveries which have rendered his name so illustrious, and which contain a far larger portion of important anatomical and biological truth than it ever before fell to the lot of one man to contribute to the science.

15. The opinions which have been put in opposition to the principle of Final Causes have, for the most part, been stated vaguely and ambiguously. Among the most definite of such principles, is that which, in the History of the subject, I have termed the Principle of metamorphosed and developed Symmetry, upon which has been founded the science of Morphology.

The reality and importance of this principle are not to be denied by us: we have shown how they are proved by its application in various sciences, and especially in botany. But those advocates of this principle who have placed it in antithesis to the doctrine of Final Causes, have by this means done far more injustice to their own favourite doctrine than damage to the one which they opposed. The adaptation of the bones of the skeleton to the muscles, the provision of fulcrums, projecting processes, channels, so that the motions and forces shall be such as the needs of life require, cannot

possibly become less striking and convincing, from any discovery of general analogies of one animal frame with another, or of laws connecting the developement of different parts. Whenever such laws are discovered, we can only consider them as the means of producing that adaptation which we so much admire. Our conviction that the Artist works intelligently, is not destroyed, though it may be modified and transferred, when we obtain a sight of his tools. Our discovery of laws cannot contradict our persuasion of ends; our Morphology cannot prejudice our Teleology.

16. The irresistible and constant apprehension of a purpose in the forms and functions of animals has introduced into the writings of speculators on these subjects various forms of expression, more or less precise, more or less figurative; as, that animals are framed with a view to the part which they have to play;—that nature does nothing in vain; that she employs the best means for her ends; and the like. However metaphorical or inexact any of these phrases may be in particular, yet taken altogether, they convey, clearly and definitely enough to preclude any serious error, a principle of the most profound reality and of the highest importance in the organical sciences. But some adherents of the morphological school of which I have spoken reject, and even ridicule, all such modes of expression. "I know nothing," says M. Geoffroy Saint-Hilaire, "of animals which have to play a part in nature. I cannot make of nature an intelligent being who does nothing in vain; who acts by the shortest mode; who does all for the best." The philosophers of this school, therefore, do not, it would seem, feel any of the admiration which is irresistibly excited in all the rest of mankind at the contemplation of the various and wonderful adaptations for the preservation, the enjoyment, the continuation of the creatures which people the globe;—at the survey of the mechanical contrivances, the chemical agencies, the prospective arrangements, the compensations, the minute adaptations, the comprehensive interdependencies, which zoology and physiology have brought into view, more and more, the further their researches have been carried. Yet the clear and deep-seated conviction of the reality of these provisions, which the study of anatomy produces in its most profound and accurate cultivators, cannot be shaken by any objections to the metaphors or terms in which this conviction is clothed. In regard to the idea of a purpose in organization, as in regard to any other idea, we cannot fully express our meaning by phrases borrowed from any extraneous source; but that impossibility arises precisely from the circumstance of its being a fundamental idea which is inevitably assumed in our representation of each special fact. The same objection has been made to the idea of mechanical *force*, on account of its being often expressed in metaphorical language; for writers have spoken of an *energy*, *effort*, or *solicitation* to motion; and bodies have been said to be *animated* by a force. Such language, it has been urged, implies volition, and the act of animated beings. But the idea of force as distinct from mere motion,—as the cause of motion, or of tendency to motion,—is not on that

account less real. We endeavour in vain to conduct our mechanical reasonings without the aid of this idea, and must express it as we can. Just as little can we reason concerning organized beings without assuming that each part has its function, each function its purpose; and so far as our phrases imply this, they will not mislead us, however inexact, or however figurative they be.

17. The doctrine of a purpose in organization has been sometimes called the doctrine of *the Conditions of Existence;* and has been stated as teaching that each animal must be so framed as to contain in its structure the conditions which its existence requires. When expressed in this manner, it has given rise to the objection, that it merely offers an identical proposition; since no animal *can* exist without such conditions. But in reality, such expressions as those just quoted give an inadequate statement of the Principle of a Final Cause. For we discover in innumerable cases, arrangements in an animal, of which we see, indeed, that they are subservient to its well being; but the nature of which we never should have been able at all to conjecture, from considering what was necessary to its existence, and which strike us, no less by their unexpectedness than by their adaptation: so far are they from being presented by any perceptible necessity. Who would venture to say that the trochlear muscle, or the power of articulate speech, must occur in man, because they are the necessary conditions of his existence? When, indeed, the general scheme and mode of being of an animal are known, the expert and profound anatomist can reason concerning the proportions and form of its various parts and organs, and prove in some measure what their relations must be. We can assert, with Cuvier, that certain forms of the viscera require certain forms of the teeth, certain forms of the limbs, certain powers of the senses. But in all this, the functions of self-nutrition and digestion are supposed already existing as ends: and it being taken for granted, as the only conceivable basis of reasoning, that the organs are means to these ends, we may discover what modifications of these organs are necessarily related to and connected with each other. Instead of terming this rule of speculation merely "the principle of the conditions of existence," we might term it "the principle of the conditions of organs as *means* adapted to animal existence as their *end*." And how far this principle is from being a mere barren truism, the extraordinary discoveries made by the great assertor of the principle, and universally assented to by naturalists, abundantly prove. The vast extinct creation which is recalled to life in Cuvier's great work, the *Ossemens Fossiles*, cannot be the consequence of a mere identical proposition.

18. It has been objected, also, that the doctrine of Final Causes supposes us to be acquainted with the intentions of the Creator; which, it is insinuated, is a most presumptuous and irrational basis for our reasonings. But there can be nothing presumptuous or irrational in reasoning on that basis, which if we reject, we cannot reason at all. If men really can discern, and cannot help discerning, a design in certain portions of the works of creation, this per-

ception is the soundest and most satisfactory ground for the convictions to which it leads. The Ideas which we necessarily employ in the contemplation of the world around us, afford us the only natural means of forming any conception of the Creator and Governor of the Universe; and if we are by such means enabled to elevate our thoughts, however inadequately, towards Him, where is the presumption of doing so? or rather, where is the wisdom of refusing to open our minds to contemplations so animating and elevating, and yet so entirely convincing? We possess the ideas of time and space, under which all the objects of the universe present themselves to us; and in virtue of these ideas thus possessed, we believe the Creator to be eternal and omnipotent. When we find that we, in like manner, possess the idea of a Design in Creation, and that with regard to ourselves, and creatures more or less resembling ourselves, we cannot but contemplate their constitution under this idea, we cannot abstain from ascribing to the Creator the infinite profundity and extent of design to which all these special instances belong as parts of a whole.

19. I have here considered Design as manifest in organization only: for in that field of speculation it is forced upon us as contained in all the phenomena, and as the only mode of our understanding them. The existence of Final Causes has often been pointed out in other portions of the creation;—in the apparent adaptations of the various parts of the earth and of the solar system to each other and to organized beings. In these provinces of speculation, however, the principle of Final Causes is no longer the basis and guide, but the sequel and result of our physical reasonings. If in looking at the universe, we follow the widest analogies of which we obtain a view, we see, however dimly, reason to believe that all its laws are adapted to each other, and intended to work together for the benefit of its organic population, and for the general welfare of its rational tenants. On this subject, however, not immediately included in the principle of Final Causes as here stated, I shall not dwell. I will only make this remark: that the assertion appears to be quite unfounded, that as science advances from point to point, Final Causes recede before it, and disappear one after the other. The principle of design changes its mode of application indeed, but it loses none of its force. We no longer consider particular facts as produced by special interpositions, but we consider design as exhibited in the establishment and adjustment of the laws by which particular facts are produced. We do not look upon each particular cloud as brought near us that it may drop fatness on our fields, but the general adaptation of the laws of heat, and air, and moisture, to the promotion of vegetation, does not become doubtful. We do not consider the sun as less intended to warm and vivify the tribes of plants and animals, because we find that, instead of revolving round the earth as an attendant, the earth along with other planets revolves round him. We are rather, by the discovery of the general laws of nature, led into a scene of wider design, of deeper contrivance, of more comprehensive adjustments. Final Causes, if they appear

driven further from us by such an extension of our views, embrace us only with a vaster and more majestic circuit: instead of a few threads connecting some detached objects, they become a stupendous network, which is wound round and round the universal frame of things.

PALÆTIOLOGY.

NATURE OF PALÆTIOLOGY.

*1. The class of Sciences which I designate as *Palætiological* are those in which the object is to ascend from the present state of things to a more ancient condition, from which the present is derived by intelligible causes. As conspicuous examples of this class we may take Geology, Glossology or Comparative Philology, and Comparative Archæology. These provinces of knowledge might perhaps be intelligibly described as Histories; the History of the Earth,—the History of Languages,—the History of Arts. But these phrases would not fully describe the sciences we have in view; for the object to which we now suppose their investigations to be directed is not merely to ascertain what the series of events has been, as in the common forms of History, but also how it has been brought about. These sciences are to treat of causes as well as of effects. Such researches might be termed *philosophical history;* or, in order to mark more distinctly that the *causes* of events are the leading object of attention, *ætiological history.* But since it will be more convenient to describe this class of sciences by a single appellation, I have taken the liberty of proposing to call them† *Palætiological* Sciences.

While *Palæontology* describes the beings which have lived in former ages without investigating their causes, and *Ætiology* treats of causes without distinguishing historical from mechanical causation; *Palætiology* is a combination of the two sciences; exploring by means of the second the phenomena presented by the first. The portions of knowledge which I include in this term are palæontological ætiological sciences.

2. All these sciences are connected by this bond;—that they all endeavour to ascend to a past state, by considering what is the present state of things, and what are the causes of change. Geology examines the existing appearances of the materials which form the

* Phil. Ind. S. C. Book x. Chap. i.

† A philological writer, in a very interesting work, (Mr. Donaldson, in his *New Cratylus*, p. 12,) expresses his dislike of this word, and suggests that I must mean *palæ-ætiological.* I think the word is more likely to obtain currency in the more compact and euphonious form in which I have used it. It has been adopted by Mr. Winning, in his *Manual of Comparative Philology.*

earth, infers from them previous conditions, and speculates concerning the forces by which one condition has been made to succeed another. Another science, cultivated with great zeal and success in modern times, compares the languages of different countries and nations, and by an examination of their materials and structure, endeavours to determine their descent from one another: this science has been termed Comparative Philology or Ethnography; and by the French, *Linguistique*, a word which we might imitate in order to have a single name for the science, but the Greek derivative *Glossology* appears to be more convenient in its form. The progress of the Arts (Architecture and the like); how one stage of their culture produced another; and how far we can trace their maturest and most complete condition to their earliest form in various nations;—are problems of great interest belonging to another subject, which we may for the present term Comparative Archæology. I have already noticed, in the *History*,* how the researches into the origin of natural objects, and those relating to works of art, pass by slight gradations into each other; how the examination of the changes which have affected an ancient temple or fortress, harbour or river, may concern alike the geologist and the antiquary. Cuvier's assertion that the geologist is an antiquary of a new order, is perfectly correct, for both are palætiologists.

3. We are very far from having exhausted, by this enumeration, the class of sciences which are thus connected. We may easily point out many other subjects of speculation of the same kind. As we may look back towards the first condition of our planet, we may in like manner turn our thoughts towards the first condition of the solar system, and try whether we can discern any traces of an order of things antecedent to that which is now established; and if we find, as some great mathematicians have conceived, indications of an earlier state in which the planets were not yet gathered into their present forms, we have, in the pursuit of this train of research, a palætiological portion of Astronomy. Again, as we may inquire how languages, and how man, have been diffused over the earth's surface from place to place, we may make the like inquiry with regard to the races of plants and animals, founding our inferences upon the existing geographical distribution of the animal and vegetable kingdoms: and thus the Geography of Plants and of Animals also becomes a portion of Palætiology. Again, as we can in some measure trace the progress of Arts from nation to nation and from age to age, we can also pursue a similar investigation with respect to the progress of Mythology, of Poetry, of Government, of Law. Thus the philosophical history of the human race, viewed with reference to these subjects, if it can give rise to knowledge so exact as to be properly called Science, will supply sciences belonging to the class I am now to consider.

4. It is not an arbitrary and useless proceeding to construct such a class of sciences. For wide and various as their subjects are, it

* Hist. Ind. Sci. iii., 482.

will be found that they have all certain principles, maxims, and rules of procedure in common; and thus may reflect light upon each other by being treated of together. Indeed it will, I trust, appear, that we may by such a juxtaposition of different speculations, obtain most salutary lessons. And questions, which, when viewed as they first present themselves under the aspect of a special science, disturb and alarm men's minds, may perhaps be contemplated more calmly, as well as more clearly, when they are considered as general problems of palætiology.

5. It will at once occur to the reader that, if we include in the circuit of our classification such subjects as have been mentioned, —politics and law, mythology and poetry,—we are travelling very far beyond the material sciences within whose limits we at the outset proposed to confine our discussion of principles. But we shall remain faithful to our original plan; and for that purpose shall confine ourselves in this work to those palætiological sciences which deal with material things. It is true, that the general principles and maxims which regulate those sciences apply also to investigations of a parallel kind respecting the products which result from man's imaginative and social endowments. But although there may be a similarity in the general form of such portions of knowledge, their materials are so different from those with which we have been hitherto dealing, that we cannot hope to take them into our present account with any profit. Language, Government, Law, Poetry, Art, embrace a number of peculiar Fundamental Ideas, hitherto not touched upon in the disquisitions in which we have been engaged; and most of them involved in far greater perplexity and ambiguity, the subject of controversies far more vehement, than the Ideas we have hitherto been examining. We must therefore avoid resting any part of our philosophy upon sciences, or supposed sciences, which treat of such subjects. To attend to this caution, is the only way in which we can secure the advantage we proposed to ourselves at the outset, of taking, as the basis of our speculations, none but systems of undisputed truths, clearly understood and expressed.* We have already said that we must, knowingly and voluntarily, resign that livelier and warmer interest which doctrines on subjects of Polity or Art possess, and content ourselves with the cold truths of the material sciences, in order that we may avoid having the very foundations of our philosophy involved in controversy, doubt, and obscurity.

6. We may remark, however, that the necessity of rejecting from our survey a large portion of the researches which the general notion of Palætiology includes, suggests one consideration which adds to the interest of our task. We began our inquiry with the trust that any sound views which we should be able to obtain respecting the nature of truth in the physical sciences, and the mode of discovering it, must also tend to throw light upon the nature and prospects of knowledge of all other kinds;—must be useful to

* See Phil. Ind. Sci. Vol. i. p. 8.

us in moral, political, and philological researches. We stated this as a confident anticipation; and the evidence of the justice of our belief already begins to appear. We have seen that biology leads us to psychology, if we choose to follow the path; and thus the passage from the material to the immaterial has already unfolded itself at one point; and we now perceive that there are several large provinces of speculation which concern subjects belonging to man's immaterial nature, and which are governed by the same laws as sciences altogether physical. It is not our business here to dwell on the prospects which our philosophy thus opens to our contemplation; but we may allow ourselves, in this last stage of our pilgrimage among the foundations of the physical sciences, to be cheered and animated by the ray that thus beams upon us, however dimly, from a higher and brighter region.

But in our reasonings and examples we shall mainly confine ourselves to the physical sciences; and for the most part to Geology, which in the *History* I have put forwards as the best representative of the Palætiological Sciences.

DOCTRINE OF CATASTROPHES AND OF UNIFORMITY.

1. *Doctrine of Catastrophes.*—The attempts to frame a theory of the earth have brought into view two completely opposite opinions: —one, which represents the course of nature as *uniform* through all ages, the causes which produce change having had the same intensity in former times which they have at the present day;—the other opinion, which sees in the present condition of things evidences of *catastrophes;* changes of a more sweeping kind, and produced by more powerful agencies than those which occur in recent times. Geologists who held the latter opinion, maintained that the forces which have elevated the Alps or the Andes to their present height could not have been any forces which are now in action: they pointed to vast masses of strata hundreds of miles long, thousands of feet thick, thrown into highly-inclined positions, fractured, dislocated, crushed: they remarked that upon the shattered edges of such strata they found enormous accumulations of fragments and rubbish, rounded by the action of water, so as to denote ages of violent aqueous action: they conceived that they saw instances in which whole mountains of rock in a state of igneous fusion, must have burst the earth's crust from below: they found that in the course of the revolutions by which one stratum of rock was placed upon another, the whole collection of animal species which tenanted the earth and the seas had been removed, and a new set of living things introduced in its place: finally, they found above all the strata vast masses of sand and gravel containing bones of animals, and apparently the work of a mighty deluge. With all these proofs before their eyes they thought it impossible not to judge that the agents of change by which the world was urged from one condition to another till it reached its present state, must have been more violent, more powerful, than any which we see at work around us.

They conceived that the evidence of "catastrophes" was irresistible.

2. *Doctrine of Uniformity.*—I need not here repeat the narrative (given in the History*) of the process by which this formidable array of proofs was, in the minds of some eminent geologists, weakened, and at last overcome. This was done by showing that the sudden breaks in the succession of strata were apparent only, the discontinuity of the series which occurred in one country being removed by terms interposed in another locality: by urging that the total effect produced by existing causes, taking into account the accumulated result of long periods, is far greater than a casual speculator would think possible: by making it appear that there are in many parts of the world evidences of a slow and imperceptible rising of the land since it was the habitation of now existing species: by proving that it is not universally true that the strata separated in time by supposed catastrophes contain distinct species of animals: by pointing out the limited fields of the supposed diluvial action: and finally, by remarking that though the *creation* of species is a mystery, the *extinction* of them is going on in our own day. Hypotheses were suggested, too, by which it was conceived that the change of climate might be explained, which, as the consideration of the fossil remains seemed to show, must have taken place between the ancient and the modern times. In this manner the whole evidence of catastrophes was explained away: the notion of a series of paroxysms of violence in the causes of change was represented as a delusion arising from our contemplating short periods only in the action of present causes: length of time was called in to take the place of intensity of force: and it was declared that geology need not despair of accounting for the revolutions of the earth, as astronomy accounts for the revolutions of the heavens, by the universal action of causes which are close at hand to us, operating through time and space without variation or decay.

An antagonism of opinions, somewhat of the same kind as this, will be found to manifest itself in the other Palætiological Sciences as well as in Geology; and it will be instructive to endeavour to balance these opposite doctrines. I will mention some of the considerations which bear upon the subject.

3. *Is Uniformity probable à priori?*—The doctrine of Uniformity in the course of nature has sometimes been represented by its adherents as possessing a great degree of *à priori* probability. It is highly unphilosophical, it has been urged, to assume that the causes of the geological events of former times were of a different kind from causes now in action, if causes of this latter kind can in any way be made to explain the facts. The analogy of all other sciences compels us, it was said, to explain phenomena by known, not by unknown, causes. And on these grounds the geological teacher recommended† "an earnest and patient endeavour to reconcile the indications of former change with the evidence of gradual mutations *now in* progress."

* *Hist.* Ind. Sci., iii. 612.

† Lyell, B. iv. c. i. p. 328.

But on this we may remark, that if by *known* causes we mean causes acting with the same intensity which they have during historical times, the restriction is altogether arbitrary and groundless. Let it be granted, for instance, that many parts of the earth's surface are now undergoing an imperceptible rise. It is not pretended that the rate of this elevation is rigorously uniform; what, then, are the limits of its velocity? Why may it not increase so as to assume that character of violence which we may term a *catastrophe* with reference to all changes hitherto recorded? Why may not the rate of elevation be such that we may conceive the strata to assume *suddenly* a position nearly vertical? and is it, in fact, easy to conceive a position of strata nearly vertical, a position which occurs so frequently, to be *gradually* assumed? In cases where the strata are nearly vertical, as in the Isle of Wight, and hundreds of other places, or where they are actually inverted, as sometimes occurs, are not the causes which have produced the effect as truly *known* causes, as those which have raised the coasts where we trace the former beach in an elevated terrace? If the latter case proves *slow* elevation, does not the former case prove *rapid* elevation? In neither case have we any measure of the time employed in the change; but does not the very nature of the results enable us to discern, that if one was gradual, the other was comparatively sudden?

The causes which are now elevating a portion of Scandinavia can be called known *causes*, only because we know the *effect*. Are not the causes which have elevated the Alps and the Andes known causes in the same sense? We know nothing in either case which confines the intensity of the force within any limit, or prescribes to it any law of uniformity. Why, then, should we make a merit of cramping our speculations by such assumptions? Whether the causes of change do act uniformly;—whether they oscillate only within narrow limits;—whether their intensity in former times was nearly the same as it now is;—these are precisely the questions which we wish Nature to answer to us impartially and truly: where is then the wisdom of "an earnest and patient endeavour" to secure an *affirmative* reply?

Thus I conceive that the assertion of an *à priori* claim to probability and philosophical spirit in favour of the doctrine of uniformity, is quite untenable. We must learn from an examination of all the facts, and not from any assumption of our own, whether the course of nature be uniform. The limit of intensity being really unknown, catastrophes are just as probable as uniformity. If a volcano may repose for a thousand years, and then break out and destroy a city; why may not another volcano repose for ten thousand years, and then destroy a continent; or if a continent, why not the whole habitable surface of the earth?

4. *Cycle of Uniformity indefinite.*—But this argument may be put in another form. When it is said that the course of nature is uniform, the assertion is not intended to exclude certain smaller variations of violence and rest, such as we have just spoken of;—

alternations of activity and repose in volcanos; or earthquakes, deluges, and storms, interposed in a more tranquil state of things. With regard to such occurrences, terrible as they appear at the time, they may not much affect the average rate of change; there may be a *cycle*, though an irregular one, of rapid and slow change; and if such cycles go on succeeding each other, we may still call the order of nature uniform, notwithstanding the periods of violence which it involves. The maximum and minimum intensities of the forces of mutation alternate with one another; and we may estimate the average course of nature as that which corresponds to something between the two extremes.

But if we thus attempt to maintain the uniformity of nature by representing it as a series of *cycles*, we find that we cannot discover, in this conception, any solid ground for excluding catastrophes. What is the length of that cycle the repetition of which constitutes uniformity? What interval from the maximum to the minimum does it admit of? We may take for our cycle a hundred or a thousand years, but evidently such a proceeding is altogether arbitrary. We may mark our cycles by the greatest known paroxysms of volcanic and terremotive agency, but this procedure is no less indefinite and inconclusive than the other.

But further; since the cycle in which violence and repose alternate is thus indefinite in its length and in its range of activity, what ground have we for assuming more than *one* such cycle, extending from the origin of things to the present time? Why may we not suppose the maximum force of the causes of change to have taken place at the earliest period, and the tendency towards the minimum to have gone on ever since? Or instead of only one cycle, there may have been several, but of such length that our historical period forms a portion only of the last;—the feeblest portion of the latest cycle. And thus violence and repose may alternate upon a scale of time and intensity so large, that man's experience supplies no evidence enabling him to estimate the amount. The course of things is *uniform*, to an intelligence which can embrace the succession of several cycles, but it is *catastrophic* to the contemplation of man, whose survey can grasp a part only of one cycle. And thus the hypothesis of uniformity, since it cannot exclude degrees of change, nor limit the range of these degrees, nor define the interval of their recurrence, cannot possess any essential simplicity which, previous to inquiry, gives it a claim upon our assent superior to that of the opposite catastrophic hypothesis.

5. *Uniformitarian Arguments are Negative only.*—There is an opposite tendency in the mode of maintaining the catastrophist and the uniformitarian opinions, which depends upon their fundamental principles, and shows itself in all the controversies between them. The Catastrophist is affirmative, the Uniformitarian is negative in his assertions: the former is constantly attempting to construct a theory; the latter delights in demolishing all theories. The one is constantly bringing fresh evidence of some great past event, or series of events, *of a striking* and definite kind; his antagonist is at every step explain-

ing away the evidence, and showing that it proves nothing. One geologist adduces his proofs of a vast universal deluge; but another endeavours to show that the proofs do not establish either the universality or the vastness of such an event. The inclined broken edges of a certain formation covered with their own fragments beneath superjacent horizontal deposits are at one time supposed to prove a catastrophic breaking up of the earlier strata; but this opinion is controverted by showing that the same formations, when pursued into other countries, exhibit a uniform gradation from the lower to the upper, with no trace of violence. Extensive and lofty elevations of the coast, continents of igneous rock, at first appear to indicate operations far more gigantic than those which now occur; but attempts are soon made to show that time only is wanting to enable the present age to rival the past in the production of such changes. Each new fact adduced by the catastrophist is at first striking and apparently convincing; but as it becomes familiar, it strikes the imagination less powerfully; and the uniformitarian, constantly labouring to produce some imitation of it by the machinery which he has so well studied, at last in every case seems to himself to succeed, so far as to destroy the effect of his opponent's evidence.

This is so with regard to more remote, as well as with regard to immediate evidences of change. When it is ascertained that in every part of the earth's crust the temperature increases as we descend below the surface, at first this fact seems to indicate a central heat: and a central heat naturally suggests an earlier state of the mass, in which it was incandescent, and from which it is now cooling. But this original incandescence of the globe of the earth is manifestly an entire violation of the present course of things; it belongs to the catastrophist view, and the advocates of uniformity have to explain it away. Accordingly, one of them holds that this increase of heat in descending below the surface may very possibly not go on all the way to the centre. The heat which increases at first as we descend, may, he conceives, afterwards decrease; and he suggests causes which may have produced such a succession of hotter and colder shells within the mass of the earth. I have mentioned this suggestion in the History of Geology; and have given my reasons for believing it altogether untenable.* Other persons also, desirous of reconciling this subterraneous heat with the tenet of uniformity, have offered another suggestion:—that the warmth or incandescence of the interior parts of the earth does not arise out of an originally hot condition from which it is gradually cooling, but results from chemical action constantly going on among the materials of the earth's substance. And thus new attempts are perpetually making, to escape from the cogency of the reasonings which send us towards an original state of things different from the present. Those who theorize concerning an origin go on building up the fabric of their speculations, while those who think such theories unphilosophical, ever and anon dig

* Hist. Ind. Sci. iii. 562, and note.

away the foundation of this structure. As we have already said, the uniformitarian's doctrines are a collection of negatives.

This is so entirely the case, that the uniformitarian would for the most part shrink from maintaining as positive tenets the explanations which he so willingly uses as instruments of controversy. He puts forward his suggestions as difficulties, but he will not stand by them as doctrines. And this is in accordance with his general tendency; for any of his hypotheses, if insisted upon as positive theories, would be found inconsistent with the assertion of uniformity. For example, the nebular hypothesis appears to give to the history of the heavens an aspect which obliterates all special acts of creation, for, according to that hypothesis, new planetary systems are constantly forming; but when asserted as the origin of our own solar system, it brings with it an original incandescence, and an origin of the organic world. And if, instead of using the chemical theory of subterraneous heat to neutralize the evidence of original incandescence, we assert it as a positive tenet, we can no longer maintain the infinite past duration of the earth; for chemical forces, as well as mechanical, tend to equilibrium; and that condition once attained, their efficacy ceases. Chemical affinities tend to form new compounds; and though, when many and various elements are mingled together, the play of synthesis and analysis may go on for a long time, it must at last end. If, for instance, a large portion of the earth's mass were originally pure potassium, we can imagine violent igneous action to go on so long as any part remained unoxidized; but when the oxidation of the whole has once taken place, this action must be at an end; for there is in the hypothesis no agency which can reproduce the deoxidized metal. Thus a perpetual motion is impossible in chemistry, as it is in mechanics; and a theory of constant change continued through infinite time, is untenable when asserted upon chemical, no less than upon mechanical principles. And thus the scepticism of the uniformitarian is of force only so long as it is employed against the dogmatism of the catastrophist. When the doubts are erected into dogmas, they are no longer consistent with the tenet of uniformity. When the negations become affirmations, the negation of an origin vanishes also.

6. *Uniformity in the Organic World.*—In speaking of the violent and sudden changes which constitute catastrophes, our thoughts naturally turn at first to great *mechanical* and *physical* effects;—ruptures and displacements of strata; extensive submersions and emersions of land; rapid changes of temperature. But the catastrophes which we have to consider in geology affect the *organic* as well as the inorganic world. The sudden extinction of one collection of species, and the introduction of another in their place, is a catastrophe, even if unaccompanied by mechanical violence. Accordingly, the antagonism of the catastrophist and uniformitarian school has shown itself in this department of the subject, as well as in the other. When geologists had first discovered that the successive strata are each distinguished by appropriate organic fossils, they assumed at once that each of these collections of living things belonged to a separate creation. But this conclusion, as I have

already said, Mr. Lyell has attempted to invalidate, by proving that in the existing order of things, some species become extinct; and by suggesting it as possible, that in the same order it may be true that new species are from time to time produced, even in the present course of nature. And in this, as in the other part of the subject, he calls in the aid of vast periods of time, in order that the violence of the changes may be softened down: and he appears disposed to believe that the actual extinction and creation of species may be so slow as to excite no more notice than it has hitherto obtained; and yet may be rapid enough, considering the immensity of geological periods, to produce such a succession of different collections of species as we find in the strata of the earth's surface.

7. *Origin of the present Organic World.*—The last great event in the history of the vegetable and animal kingdoms was that by which their various tribes were placed in their present seats. And we may form various hypotheses with regard to the sudden or gradual manner in which we may suppose this distribution to have taken place. We may assume that at the beginning of the present order of things, a stock of each species was placed in the vegetable or animal *province* to which it belongs, by some cause out of the common order of nature; or we may take a uniformitarian view of the subject, and suppose that the provinces of the organic world derived their population from some anterior state of things by the operation of natural causes.

Nothing has been pointed out in the existing order of things which has any analogy or resemblance, of any valid kind, to that creative energy which must be exerted in the production of a new species. And to assume the introduction of new species as a part of the order of nature, without pointing out any natural fact with which such an event can be classed, would be to reject creation by an arbitrary act. Hence, even on natural grounds, the most intelligible view of the history of the animal and vegetable kingdoms seems to be, that each period which is marked by a distinct collection of species forms a cycle; and that at the beginning of each such cycle a creative power was exerted, of a kind to which there was nothing at all analogous in the succeeding part of the same cycle. If it be urged that in some cases the same species, or the same genus, runs through two geological formations, which must, on other grounds, be referred to different cycles of creative energy, we may reply that the creation of many new species does not imply the extinction of all the old ones.

Thus we are led by our reasonings to this view, that the present order of things was commenced by an act of creative power entirely different to any agency which has been exerted since. None of the influences which have modified the present races of animals and plants since they were placed in their habitations on the earth's surface can have had any efficacy in producing them at first. We are necessarily driven to assume, as the beginning of the present cycle of organic nature, an event not included in the course of nature. And we may remark that this necessity is the more cogent, precisely because other cycles have preceded the present.

8. *Nebular Origin of the Solar System.*—If we attempt to apply the same antithesis of opinion (the doctrines of catastrophe and uniformity), to the other subjects of palætiological science, we shall be led to similar conclusions. Thus if we turn our attention to astronomical palætiology, we perceive that the nebular hypothesis has a uniformitarian tendency. According to this hypothesis the formation of this our system of sun, planets, and satellites, was a process of the same kind as those which are still going on in the heavens. One after another, nebulæ condense into separate masses, which begin to revolve about each other by mechanical necessity, and form systems of which our solar system is a finished example. But we may remark, that the uniformitarian doctrine on this subject rests on most unstable foundations. We have as yet only very vague and imperfect reasonings to show that by such condensation a *material* system such as ours could result; and the introduction of *organized* beings into such a material system is utterly out of the reach of our philosophy. Here again, therefore, we are led to regard the present order of the world as pointing towards an origin altogether of a different kind from any thing which our material science can grasp.

9. *Origin of Languages.*—We may venture to say that we should be led to the same conclusion once more, if we were to take into our consideration those palætiological sciences which are beyond the domain of matter; for instance, the history of languages. We may explain many of the differences and changes which we become acquainted with, by referring to the action of causes of change which still operate. But what glossologist will venture to declare that the efficacy of such causes has been uniform; that the influences which mould a language, or make one language differ from others of the same stock, operated formerly with no more efficacy than they exercise now. "Where," as has elsewhere been asked, "do we now find a language in the process of formation, unfolding itself in inflexions, terminations, changes of vowels by grammatical relations, such as characterise the oldest known languages!" Again, as another proof how little the history of languages suggests to the philosophical glossologist the persuasion of a uniform action of the causes of change, I may refer to the conjecture of Dr. Prichard, that the varieties of language produced by the separation of one stock into several, have been greater and greater as we go backwards in history:—that* the formation of sister dialects from a common language, (as the Scandinavian, German, and Saxon dialects from the Teutonic, or the Gaelic, Erse and Welsh from the Celtic,) belongs to the first millennium before the Christian era; while the formation of cognate languages of the same family, as the Sanskrit, Latin, Greek and Gothic, must be placed at least two thousand years before that era; and at a still earlier period took place the separation of the great families themselves, the Indo-European, Semitic, and others, in which it is now

* Researches, ii. 224.

difficult to trace the features of a common origin. No hypothesis except one of this kind will explain the existence of the families, groups, and dialects of languages, which we find in existence. Yet this is an entirely different view from that which the hypothesis of the uniform progress of change would give. And thus in the earliest stages of man's career, the revolutions of language must have been, even by the evidence of the theoretical history of language itself, of an order altogether different from any which have taken place within the recent history of man. And we may add, that as the early stages of the progress of language must have been widely different from those later ones of which we can in some measure trace the natural causes, we cannot place the origin of language in any point of view in which it comes under the jurisdiction of natural causation at all.

10. *No Natural Origin discoverable.*—We are thus led by a survey of several of the palætiological sciences to a confirmation of the principle formerly asserted,* That in no palætiological science has man been able to arrive at a beginning which is homogeneous with the known course of events. We can in such sciences often go very far back;—determine many of the remote circumstances of the past series of events;—ascend to a point which seems to be near the origin;—and limit the hypothesis respecting the origin itself:—but philosophers never have demonstrated, and, so far as we can judge, probably never will be able to demonstrate, what was that primitive state of things from which the progressive course of the world took its first departure. In all these paths of research, when we travel far backwards, the aspect of the earlier portions becomes very different from that of the advanced part on which we now stand; but in all cases the path is lost in obscurity as it is traced backwards towards its starting point:—it becomes not only invisible, but unimaginable; it is not only an interruption, but an abyss, which interposes itself between us and any intelligible beginning of things.

RELATION OF TRADITION TO PALÆTIOLOGY.

1. *Importance of Tradition.*—Since the Palætiological Sciences have it for their business to study the train of past events produced by natural causes down to the present time, the knowledge concerning such events which is supplied by the remembrance and records of man, in whatever form, must have an important bearing upon these sciences. All changes in the condition and extent of land and sea, which have taken place within man's observation, all effects of deluges, sea-waves, rivers, springs, volcanos, earthquakes, and the like, which come within the reach of human history, have a strong interest for the palætiologist. Nor is he less concerned in all recorded instances of the modification of the forms and habits of plants and animals, by the operations of man, or by transfer

* Hist. Ind. Sci., iii. 581.

from one land to another. And when we come to the Palætiology of Language, of Art, of Civilization, we find our subject still more closely connected with history; for in truth these are historical, no less than palætiological investigations. But, confining ourselves at present to the material sciences, we may observe that though the importance of the information which tradition gives us, in the sciences now under our consideration, as, for instance, geology, has long been tacitly recognised; yet it is only recently that geologists have employed themselves in collecting their historical facts upon such a scale and with such comprehensive views as are required by the interest and use of collections of this kind. The Essay of Von Hoff,* *On the Natural Alterations in the Surface of the Earth which are proved by Tradition*, was the work which first opened the eyes of geologists to the extent and importance of this kind of investigation. Since that time the same path of research has been pursued with great perseverance by others, especially by Mr. Lyell; and is now justly considered as an essential portion of geology.

2. *Connexion of Tradition and Science.*—Events which we might naturally expect to have some bearing on geology, are recorded in the historical writings which, even on mere human grounds, have the strongest claim to our respect as records of the early history of the world, and are confirmed by the traditions of various nations all over the globe, namely, the formation of the earth and its population, and a subsequent deluge. It has been made a matter of controversy how the narrative of these events is to be understood, so as to make it agree with the facts which an examination of the earth's surface and of its vegetable and animal population discloses to us. Such controversies, when they are considered as merely archæological, may occur in any of the palætiological sciences. We may have to compare and to reconcile the evidence of existing phenomena with that of historical tradition. But under some circumstances this process of conciliation may assume an interest of another kind, on which we will make a few remarks.

3. *Natural and Providential History of the World.*—We may contemplate the existence of man upon the earth, his origin and his progress, in the same manner as we contemplate the existence of any other race of animals; namely, in a purely palætiological view. We may consider how far our knowledge of laws of causation enables us to explain his diffusion and migration, his differences and resemblances, his actions and works. And this is the view of man as a member of the *natural* course of things.

But man, at the same time the contemplator and the subject of his own contemplation, endowed with faculties and powers which make him a being of a different nature from other animals, cannot help regarding his own actions and enjoyments, his recollections and his hopes, under an aspect quite different from any that we

* Vol. i. 1822; Vol. ii. 1824.

have yet had presented to us. We have been endeavouring to place in a clear light the Fundamental Ideas which are that Cause on which depends our knowledge of the whole course of things. But there are other Ideas in which that necessarily results. He acts; he is led by his native constitution to form and fulfil his own actions, and those of his fellow-men as affecting him. He is the cause of that cause, leading to this or that effect: but sees as good or bad, as what they ought or ought not to be. He has Ideas of *moral* relations as well as those Ideas of material relations with which we have hitherto been occupied. He is a moral as well as a natural agent.

Contemplating himself and the world around him by the light of his Moral Ideas, man is led to the conviction that his moral faculties were bestowed upon him by design and for a purpose; that he is the subject of a moral government; that the course of the world is directed by the Power which governs it to the unfolding and perfecting of man's moral nature; that this guidance may be traced in the career of individuals and of the world; that there is a *providential* as well as a natural course of things.

Yet this view is beset by no small difficulties. The full developement of man's moral faculties;—the perfection of his nature up to the measure of his own ideas;—the adaptation of his moral being to an ultimate destination, by its transit through a world full of moral evil, in which each has his share;—are effects for which the economy of the world appears to contain no adequate provision. Man, though aware of his moral nature, and ready to believe in an ultimate destination of purity and blessedness, is too feeble to resist the temptation of evil, and to restore his purity when once lost. He cannot but look for some confirmation of that providential order which he has begun to believe; some provision for those deficiencies in his moral condition which he has begun to feel.

He looks at the history of the world, and he finds that at a certain period it offers to him the promise of what he seeks. When the natural powers of man had been developed to their full extent, and were beginning to exhibit symptoms of decay; when the intellectual progress of the world appeared to have reached its limit, without supplying man's moral needs; we find the great Epoch in the Providential history of the world. We find the announcement of a Dispensation by which man's deficiencies shall be supplied and his aspirations fulfilled: we find a provision for the purification, the support, and the ultimate beatification of those who use the provided means. And thus the providential course of the world becomes consistent and intelligible.

4. *The Sacred Narrative.*—But with the new Dispensation, we receive, not only on account of its own scheme and history, but also a written narrative of the providential course of the world from the earliest times, and even from its first creation. This narrative is recognised and authorized by the new dispensation and accredited by some of the same evidences as the dispensation itself. That the existence of such a sacred narrative should be

part of the providential order of things, cannot but appear natural; but naturally also, the study of it leads to some difficulties.

The Sacred Narrative in some of its earliest portions speaks of natural objects and occurrences respecting them. In the very beginning of the course of the world, we may readily believe (indeed, as we have seen in the last chapter, our scientific researches lead us to believe) that such occurrences were very different from any thing which now takes place;—different to an extent and in a manner which we cannot estimate. Now the narrative must speak of objects and occurrences in the words and phrases which have derived their meaning from their application to the existing natural state of things. When applied to an initial supernatural state therefore, these words and phrases cannot help being to us obscure and mysterious, perhaps ambiguous and seemingly contradictory.

5. *Difficulties in interpreting the Sacred Narrative.*—The moral and providential relations of man's condition are so much more important to him than mere natural relations, that at first we may well suppose he will accept the Sacred Narrative, as not only unquestionable in its true import, but also as a guide in his views even of mere natural relations. He will try to modify the conceptions which he entertains of objects and their properties, so that the Sacred Narrative of the supernatural condition shall retain the first meaning which he had put upon it in virtue of his own habits in the usage of language.

But man is so constituted that he cannot persist in this procedure. The powers and tendencies of his intellect are such that he cannot help trying to attain true conceptions of objects and their properties by the study of things themselves. For instance, when he at first read of a firmament dividing the waters above from the waters below, he perhaps conceived a transparent floor in the skies, on which the superior waters rested which descended in rain; but as his observations and his reasonings satisfied him that such a floor could not exist, he became willing to allow (as St. Augustin allowed) that the waters above the firmament are in a state of vapour. And in like manner in other subjects, men, as their views of nature become more distinct and precise, modified, so far as it was necessary for consistency's sake, their first rude interpretations of the Sacred Narrative; so that, without in any degree losing its import as a view of the providential course of the world, it should be so conceived as not to contradict what they knew of the natural order of things.

But this accommodation was not always made without painful struggles and angry controversies. When men had conceived the occurrences of the Sacred Narrative in a particular manner, they could not readily and willingly adopt a new mode of conception; and they resisted all attempts to recommend it to them, as attacks upon the sacredness of the Narrative. They had clothed their belief of the workings of Providence in certain images; and they clung to those images with the persuasion that without them their belief could not subsist. Thus they imagined to themselves that

the earth was a flat floor, solidly and broadly laid for the convenience of man, and they felt as if the kindness of Providence was disparaged, when it was maintained that the earth was a globe held together only by the mutual attraction of its parts.

The most memorable instance of a struggle of this kind is to be found in the circumstances which attended the introduction of the Heliocentric Theory of Copernicus to general acceptance. On this controversy I have already made some remarks in the History of Science,* and have attempted to draw from it some lessons which may be useful to us when any similar conflict of opinions may occur. I will here add a few reflections with a similar view.

6. *Such difficulties inevitable.*—In the first place, I remark that such modifications of the current interpretation of the words of Scripture appear to be an inevitable consequence of the progressive character of Natural Science. Science is constantly teaching us to describe known facts in new language, but the language of Scripture is always the same. And not only so, but the language of Scripture is necessarily adapted to the common state of man's intellectual developement, in which he is supposed not to be possessed of science. Hence the phrases used by Scripture are precisely those which science soon teaches man to consider as inaccurate. Yet they are not on that account the less fitted for their proper purpose: for if any terms had been used, adapted to a more advanced state of knowledge, they must have been unintelligible among those to whom the Scripture was first addressed. If the Jews had been told that water existed in the clouds in small drops, they would have marvelled that it did not constantly descend; and to have explained the reason of this, would have been to teach Atmology in the sacred writings. If they had read in their Scripture that the earth was a sphere, when it appeared to be a plain, they would only have been disturbed in their thoughts, or driven to some wild and baseless imaginations by a declaration to them so strange. If the Divine Speaker, instead of saying that he would set his bow in the clouds, had been made to declare that he would give to water the property of refracting different colours at different angles, how utterly unmeaning to the hearers would the words have been! And in these cases, the expressions, being unintelligible, startling, and bewildering, would have been such as tended to unfit the Sacred Narrative for its place in the providential dispensation of the world.

Accordingly, in the great controversy which took place in Galileo's time between the defenders of the then customary interpretations of Scripture, and the assertors of the Copernican system of the universe, when the innovators were upbraided with maintaining opinions contrary to Scripture, they replied that Scripture was not intended to teach men astronomy, and that it expressed the acts of divine power in images which were suited to the ideas of unscientific men. To speak of the rising and setting and travelling of the sun, of the fixity and of the foundations of the earth, was to use the

* Hist. Ind. Sci. i., 401.

only language which would have made the Sacred Narrative intelligible. To extract from these and the like expressions doctrines of science, was, they declared, in the highest degree unjustifiable; and such a course could lead, they held, to no result but a weakening of the authority of Scripture in proportion as its credit was identified with that of these modes of applying it. And this judgment has since been generally assented to by those who most reverence and value the study of the designs of Providence as well as that of the works of nature.

7. *Science tells us nothing concerning Creation.*—Other apparent difficulties arise from the accounts given in the Scripture of the first origin of the world in which we live: for example, light is represented as created before the sun. With regard to difficulties of this kind, it appears that we may derive some instruction from the result to which we were led in the last chapter;—namely, that in the sciences which trace the progress of natural occurrences, we can in no case go back to an origin, but in every instance appear to find ourselves separated from it by a state of things, and an order of events, of a kind altogether different from those which come under our experience. The thread of induction respecting the natural course of the world snaps in our fingers, when we try to ascertain where its beginning is. Since, then, science can teach us nothing positive respecting the beginning of things, she can neither contradict nor confirm what is taught by Scripture on that subject; and thus, as it is unworthy timidity to fear contradiction, so is it ungrounded presumption to look for confirmation in such cases. The providential history of the world has its own beginning, and its own evidence; and we can only render the system insecure, by making it lean on our material sciences. If any one were to suggest that the nebular hypothesis countenances the Scripture history of the formation of this system, by showing how the luminous matter of the sun might exist previous to the sun itself, we should act wisely in rejecting such an attempt to weave together these two heterogeneous threads;—the one a part of a providential scheme, the other a fragment of physical speculation.

We shall best learn those lessons of the true philosophy of science which it is our object to collect, by attending to portions of science which have gone through such crises as we are now considering; nor is it requisite, for this purpose, to bring forwards any subjects which are still under discussion. It may, however, be mentioned that such maxims as we are now endeavouring to establish, and the one before us in particular, bear with a peculiar force upon those Palætiological Sciences of which we have been treating in the present Book.

8. *Scientific views, when familiar, do not disturb the authority of Scripture.*—There is another reflection which may serve to console and encourage us in the painful struggles which thus take place, between those who maintain interpretations of Scripture already prevalent and those who contend for such new ones as the new discoveries of science require. It is this;—that though the

new opinion is resisted by one party as something destructive of the credit of Scripture and the reverence which is its due, yet, in fact, when the new interpretation has been generally established and incorporated with men's current thoughts, it ceases to disturb their views of the authority of the Scripture or of the truth of its teaching. When the language of Scripture, invested with its new meaning, has become familiar to men, it is found that the ideas which it calls up are quite as reconcilable as the former ones were with the most entire acceptance of the providential dispensation. And when this has been found to be the case, all cultivated persons look back with surprise at the mistake of those who thought that the essence of the revelation was involved in their own arbitrary version of some collateral circumstance in the revealed narrative. At the present day, we can hardly conceive how reasonable men could ever have imagined that religious reflections on the stability of the earth, and the beauty and use of the luminaries which revolve round it, would be interfered with by an acknowledgment that this rest and motion are apparent only.* And thus the authority of revelation is not shaken by any changes introduced by the progress of science in the mode of interpreting expressions which describe physical objects and occurrences; provided the new interpretation is admitted at a proper season, and in a proper spirit; so as to soften, as much as possible, both the public controversies and the private scruples which almost inevitably accompany such an alteration.

9. *When should old interpretations be given up?*—But the question then occurs, What is the proper season for a religious and enlightened commentator to make such a change in the current interpretation of sacred Scripture? At what period ought the established exposition of a passage to be given up, and a new mode of understanding the passage, such as is, or seems to be, required by new discoveries respecting the laws of nature, accepted in its place? It is plain, that to introduce such an alteration lightly and hastily would be a procedure fraught with inconvenience; for if the change were made in such a manner, it might be afterwards discovered that it had been adopted without sufficient reason, and that it was necessary to reinstate the old exposition. And the minds of the readers of Scripture, always to a certain extent and for a time disturbed by the subversion of their long-established notions, would be distressed without any need, and might be seriously unsettled. While, on the other hand, a too protracted and obstinate resistance to the innovation, on the part of the scriptural expositors, would tend to identify, at least in the minds of many, the authority of the Scripture with the truth of the exposition; and therefore would bring discredit upon the revealed word, when the established interpretation was finally proved to be untenable.

A rule on this subject, propounded by some of the most enlightened dignitaries of the Roman Catholic church, on the occasion of

* I have here borrowed a sentence or two from my own History.

the great Copernican controversy begun by Galileo, seems well worthy of our attention. The following was the opinion given by Cardinal Bellarmine at the time:—"When a *demonstration* shall be found to establish the earth's motion, it will be proper to interpret the sacred Scriptures otherwise than they have hitherto been interpreted in those passages where mention is made of the stability of the earth and movement of the heavens." This appears to be a judicious and reasonable maxim for such cases in general. So long as the supposed scientific discovery is doubtful, the exposition of the meaning of Scripture given by commentators of established credit is not wantonly to be disturbed; but when a scientific theory, irreconcilable with this ancient interpretation, is clearly proved, we must give up the interpretation, and seek some new mode of understanding the passage in question, by means of which it may be consistent with what we know; for if it be not, our conception of the things so described is no longer consistent with itself.

It may be said that this rule is indefinite, for who shall decide when a new theory is completely demonstrated, and the old interpretation become untenable? But to this we may reply, that if the rule be assented to, its application will not be very difficult. For when men have admitted as a general rule, that the current interpretations of scriptural expressions respecting natural objects and events may possibly require, and in some cases certainly will require, to be abandoned, and new ones admitted, they will hardly allow themselves to contend for such interpretations as if they were essential parts of revelation; and will look upon the change of exposition, whether it come sooner or later, without alarm or anger. And when men lend themselves to the progress of truth in this spirit, it is not of any material importance at what period a new and satisfactory interpretation of the scriptural difficulty is found; since a scientific exactness in our apprehension of the meaning of such passages as are now referred to is very far from being essential to our full acceptance of revelation.

10. *In what Spirit should the Change be accepted?*—Still these revolutions in scriptural interpretation must always have in them something which distresses and disturbs religious communities. And such uneasy feelings will take a different shape, according as the community acknowledges or rejects a paramount interpretative authority in its religious leaders. In the case in which the interpretation of the Church is binding upon all its members, the more placid minds rest in peace upon the ancient exposition, till the spiritual authorities announce that the time for the adoption of a new view has arrived; but in these circumstances, the more stirring and inquisitive minds, which cannot refrain from the pursuit of new truths and exact conceptions, are led to opinions which, being contrary to those of the Church, are held to be sinful. On the other hand, if the religious constitution of the community allow and encourage each man to study and interpret for himself the Sacred Writings, we are met by evils of another kind. In this

case, although, by the unforced influence of admired commentators, there may prevail a general agreement in the usual interpretation of difficult passages, yet as each reader of the Scripture looks upon the sense which he has adopted as being his own interpretation, he maintains it, not with the tranquil acquiescence of one who has deposited his judgment in the hands of his church, but with the keenness and strenuousness of self-love. In such a state of things, though no judicial severities can be employed against the innovators, there may arise more angry controversies than in the other case.

It is impossible to overlook the lesson which here offers itself, that it is in the highest degree unwise in the friends of religion, whether individuals or communities, unnecessarily to embark their credit in expositions of Scripture on matters which appertain to natural science. By delivering physical doctrines as the teaching of revelation, religion may lose much, but cannot gain any thing. This maxim of practical wisdom has often been urged by Christian writers. Thus St. Augustin says:* "In obscure matters and things far removed from our senses, if we read any thing, even in the divine Scripture, which may produce diverse opinions without damaging the faith which we cherish, let us not rush headlong by positive assertion to either the one opinion or the other; lest, when a more thorough discussion has shown the opinion which we had adopted to be false, our faith may fall with it: and we should be found contending, not for the doctrine of the sacred Scriptures, but for our own; endeavouring to make our doctrine to be that of the Scriptures, instead of taking the doctrine of the Scriptures to be ours." And in nearly the same spirit, at the time of the Copernican controversy, it was thought proper to append to the work of Copernicus a postil, to say that the work was written to account for the phenomena, and that people must not run on blindly and condemn either of the opposite opinions. Even when the Inquisition, in 1616, thought itself compelled to pronounce a decision upon this subject, the verdict was delivered in very moderate language; —that "the doctrine of the earth's motion appeared to be contrary to Scripture:" and yet, moderate as this expression is, it has been blamed by judicious members of the Roman church as deciding a point such as religious authorities ought not to pretend to decide; and has brought upon that church no ordinary weight of general condemnation. Kepler pointed out, in his lively manner, the imprudence of employing the force of religious authorities on such subjects: *Acies dolabræ in ferrum illisa, postea nec in lignum valet amplius. Capiat hoc cujus interest.* "If you *will* try to chop iron, the axe becomes unable to cut even wood."

11. *In what Spirit should the Change be urged?*—But while we thus endeavour to show in what manner the interpreters of Scripture may most safely and most properly accept the discoveries of science, we must not forget that there may be errors committed

* Lib. i. de Genesi, cap. xviii.

on the other side also; and that men of science, in bringing forward views which may for a time disturb the minds of lovers of Scripture, should consider themselves as bound by strict rules of candour, moderation, and prudence. Intentionally to make their supposed discoveries a means of discrediting, contradicting, or slighting the sacred Scriptures, or the authority of religion, is in them unpardonable. As men who make the science of Truth the business of their lives, and are persuaded of her genuine superiority, and certain of her ultimate triumph, they are peculiarly bound to urge her claims in a calm and temperate spirit; not forgetting that there are other kinds of truth besides that which they peculiarly study. They may properly reject authority in matters of science; but they are to leave it its proper office in matters of religion. I may here again quote Kepler's expressions: "In Theology we balance authorities, in Philosophy we weigh reasons. A holy man was Lactantius who denied that the earth was round; a holy man was Augustin, who granted the rotundity, but denied the antipodes; a holy thing to me is the Inquisition, which allows the smallness of the earth, but denies its motion; but more holy to me is Truth; and hence I prove, from philosophy, that the earth is round, and inhabited on every side, of small size, and in motion among the stars,—and this I do with no disrespect to the Doctors." I the more willingly quote such a passage from Kepler, because the entire ingenuousness and sincere piety of his character does not allow us to suspect in him any thing of hypocrisy or latent irony. That similar professions of respect may be made ironically, we have a noted example in the celebrated Introduction to *Galileo's Dialogue on the Copernican System;* probably the part which was most offensive to the authorities. "Some years ago," he begins, "a wholesome edict was promulgated at Rome, which, in order to check the perilous scandals of the present age, imposed silence upon the Pythagorean opinion of the mobility of the earth. There were not wanting," he proceeds, "persons who rashly asserted that this decree was the result, not of a judicious inquiry, but of passion ill-informed; and complaints were heard that counsellors, utterly unacquainted with astronomical observation, ought not to be allowed, with their sudden prohibitions, to clip the wings of speculative intellects. *At the hearing of rash lamentations like these, my zeal could not keep silence.*" And he then goes on to say, that he wishes, in his *Dialogue*, to show that the subject had been fully examined at Rome. Here the irony is quite transparent, and the sarcasm glaringly obvious. I think we may venture to say that this is not the temper in which scientific questions should be treated; although by some, perhaps, the prohibition of public discussion may be considered as justifying any evasion which is likely to pass unpunished.

12. *Duty of Mutual Forbearance.*—We may add, as a further reason for mutual forbearance in such cases, that the true interests of both parties are the same. The man of science is concerned, *no* less than any other person, in the truth and import of the divine

dispensation; the religious man, no less than the man of science, is, by the nature of his intellect, incapable of believing two contradictory declarations. Hence they have both alike a need for understanding the Scripture in some way in which it shall be consistent with their understanding of nature. It is for their common advantage to conciliate, as Kepler says, the finger and the tongue of God, his works and his word. And they may find abundant reason to bear with each other, even if they should adopt for this purpose different interpretations, each finding one satisfactory to himself; or if any one should decline employing his thoughts on such subjects at all. I have elsewhere* quoted a passage from Kepler† which appears to be written in a most suitable spirit: "I beseech my reader that, not unmindful of the Divine goodness bestowed upon man, he do with me praise and celebrate the wisdom of the Creator, which I open to him from a more inward explication of the form of the world, from a searching of causes, from a detection of the errors of vision; and that thus, not only in the firmness and stability of the earth may we perceive with gratitude the preservation of all living things in nature as the gift of God; but also that in its motion, so recondite, so admirable, we may acknowledge the wisdom of the Creator. But whoever is too dull to receive this science, or too weak to believe the Copernican system without harm to his piety, him, I say, I advise that, leaving the school of astronomy, and condemning, if so he please, any doctrines of the philosophers, he follow his own path, and desist from this wandering through the universe; and that, lifting up his natural eyes, with which alone he can see, he pour himself out from his own heart in worship of God the Creator, being certain that he gives no less worship to God than the astronomer, to whom God has given to see more clearly with his inward eyes, and who, from what he has himself discovered, both can and will glorify God."

13. *Case of Galileo.*—I may perhaps venture here to make a remark or two upon this subject with reference to a charge brought against a certain portion of the *History of the Inductive Sciences.* (p. 13 of this). Complaint has been made‡ that the character of the Roman church, as shown in its behaviour towards Galileo, is misrepresented in the account given of it in the History of Astronomy. It is asserted that Galileo provoked the condemnation he incurred; first, by pertinaciously demanding the assent of the ecclesiastical authorities to his opinion of the consistency of the Copernican doctrine with Scripture; and afterwards by contumaciously, and, as we have seen, contumeliously violating the silence which the church enjoined upon him. It is further declared that the statement which represents it as the habit of the Roman church to dogmatize on points of natural science is unfounded; as well as the opinion that in consequence of this habit, new scientific truths were promulgated less boldly in Italy than in other countries.

* Bridgewater Treatise, p. 314. † Com. Stell. Mart. Introd.
‡ Dublin Review, No ix. July, 1838, p. 72.

I shall reply very briefly on these subjects; for the decision of them is by no means requisite in order to establish the doctrines to which I have been led in the present chapter, nor, I hope, to satisfy my reader that my views have been collected from an impartial consideration of scientific history.

With regard to Galileo, I do not think it can be denied that he obtruded his opinions upon the ecclesiastical authorities in an unnecessary and imprudent manner. He was of an ardent character, strongly convinced himself, and urged on still more by the conviction which he produced among his disciples, and thus he became impatient for the triumph of truth. This judgment of him has recently been delivered by various independent authorities, and has undoubtedly considerable foundation.* As to the question whether authority in matters of natural science were habitually claimed by the authorities of the Church of Rome, I have to allow that I cannot produce instances which establish such a habit. We who have been accustomed to have daily before our eyes the monition which the Romish editors of Newton thought it necessary to prefix—*Cæterum latis a summo Pontifice contra telluris motum Decretis, nos obsequi profitemur*—were not likely to conjecture that this was a solitary instance of the interposition of the Papal authority on such subjects. But although it would be easy to find declarations of heresy delivered by Romish Universities, and writers of great authority, against tenets belonging to the natural sciences, I am not aware that any other case can be adduced in which the Church or the Pope can be shown to have pronounced such a sentence. I am well contented to acknowledge this; for I should be far more gratified by finding myself compelled to hold up the seventeenth century as a model for the nineteenth in this respect, than by having to sow enmity between the admirers of the past and the present through any disparaging contrast.†

With respect to the attempt made in my History to characterize the intellectual habits of Italy as produced by her religious condition,—certainly it would ill become any student of the history of science to speak slightingly of that country, always the mother of sciences, always ready to catch the dawn and hail the rising of any new light of knowledge. But I think our admiration of this acti-

* Besides the Dublin Review, I may quote the Edinburgh Review, which I suppose will not be thought likely to have a bias in favour of the exercise of ecclesiastical authority in matters of science: "Galileo contrived to surround the truth with every variety of obstruction. The tide of knowledge, which had hitherto advanced in peace, he crested with angry breakers, and he involved in its surf both his friends and his foes."—Ed. Rev. No. cxxiii. p. 126.

† I may add that the most candid of the adherents of the Church of Rome condemn the assumption of authority in matters of science, made, in this one instance at least, by the ecclesiastical tribunals. The author of the Ages of Faith (Book viii. p. 248,) says, "A congregation, it is to be lamented, declared the new system to be opposed to Scripture, and *therefore* heretical."

vity and acuteness of mind is by no means inconsistent with the opinion, that new truths were promulgated more boldly beyond the Alps, and that the subtilty of the Italian intellect loved to insinuate what the rough German bluntly asserted. Of the decent duplicity with which forbidden opinions were handled, the reviewer himself gives us instances, when he boasts of the liberality with which Copernican professors were placed in important stations by the ecclesiastical authorities, soon after the doctrine of the motion of the earth had been declared by the same authorities contrary to Scripture. And in the same spirit is the process of demanding from Galileo a public and official recantation of opinions which he had repeatedly been told by his ecclesiastical superiors he might hold as much as he pleased. I think it is easy to believe that among persons so little careful to reconcile public profession with private conviction, official decorum was all that was demanded. When Galileo had made his renunciation of the earth's motion on his knees, he rose and said, as we are told, *E pur si muove*—"and yet it *does* move." This is sometimes represented as the heroic soliloquy of a mind cherishing its conviction of the truth, in spite of persecution; I think we may more naturally conceive it uttered as a playful epigram in the ear of a cardinal's secretary, with a full knowledge that it would be immediately repeated to his master.

Besides the Ideas involved in the material sciences, of which we have already examined the principal ones, there is one Idea or Conception which our Sciences do not indeed include, but to which they not obscurely point; and the importance of this Idea will make it proper to speak of it, though this must be done very briefly.

OF THE CONCEPTION OF A FIRST CAUSE.

1. At the end of the last chapter (p. 65), we were led to this result,—that we cannot, in any of the Palætiological Sciences, ascend to a beginning which is of the same nature as the existing cause of events, and which depends upon causes that are still in operation. Philosophers never have demonstrated, and probably never will be able to demonstrate, what was the original condition of the solar system, of the earth, of the vegetable and animal worlds, of languages, of arts. On all these subjects the course of investigation, followed backwards as far as our materials allow us to pursue it, ends at last in an impenetrable gloom. We strain our eyes in vain when we try, by our natural faculties, to discern an Origin.

2. Yet speculative men have been constantly employed in attempts to arrive at that which thus seems to be placed out of their reach. The Origin of Languages, the Origin of the present Distribution of Plants and Animals, the Origin of the Earth, have been common subjects of diligent and persevering inquiry. Indeed inquiries respecting such subjects have been, at least till lately, the usual form which Palætiological researches have assumed.

Cosmogony, the origin of the world, of which, in such speculations, the earth was considered as a principal part, has been a favourite study both of ancient and of modern times: and most of the attempts at Geology previous to the present period have been *Cosmogonies* or *Geogonies*, rather than that more genuine science which we have endeavoured to delineate. Glossology, though now an extensive body of solid knowledge, was mainly brought into being by inquiries concerning the original language spoken by men; and the nature of the first separation and diffusion of languages, the first peopling of the earth by man and by animals, were long sought after with ardent curiosity, although of course with reference to the authority of the Scriptures, as well as the evidence of natural phenomena. Indeed the interest of such inquiries even yet is far from being extinguished. The disposition to explore the past in the hope of finding, by the light of natural reasoning as well as by the aid of revelation, the origin of the present course of things, appears to be unconquerable. What was the beginning? is a question which the human race cannot desist from perpetually asking. And no failure in obtaining a satisfactory answer can prevent inquisitive spirits from again and again repeating the inquiry, although the blank abyss into which it is uttered does not even return an echo.

3. What, then, is the reason of an attempt so pertinacious yet so fruitless? By what motive are we impelled thus constantly to seek what we can never find? Why are the error of our conjectures, the futility of our reasonings, the precariousness of our interpretations, over and over again proved to us in vain? Why is it impossible for us to acquiesce in our ignorance and to relinquish the inquiry? Why cannot we content ourselves with examining those links of the chain of causes which are nearest to us;—those in which the connexion is intelligible and clear; instead of fixing our attention upon those remote portions where we can no longer estimate its coherence? In short, why did not men from the first take for the subject of their speculations the Course of Nature rather than the Origin of Things?

To this we reply, that in doing what they have thus done, in seeking what they have sought, men are impelled by an intellectual necessity. They cannot conceive a series of connected occurrences without a commencement; they cannot help supposing a cause for the whole, as well as a cause for each part; they cannot be satisfied with a succession of causes without assuming a First Cause. Such an assumption is necessarily impressed upon our minds by our contemplation of a series of causes and effects; that *there must be a First Cause*, is accepted by all intelligent reasoners as an Axiom: and like other Axioms, its truth is necessarily implied in the Idea which it involves.

4. The evidence of this axiom may be illustrated in several ways. In the first place, the axiom is assumed in the argument usually offered to prove the existence of the Deity. Since, it is *said*, the world now exists, and since nothing cannot produce some-

thing, something must have existed from eternity. This Something is the First Cause: it is God.

Now what I have to remark here is this: the conclusiveness of this argument, as a proof of the existence of one independent, immutable Deity, depends entirely upon the assumption of the axiom above stated. The world, a series of causes and effects, exists: therefore there must be, not only this series of causes and effects, but also a First Cause. It will be easily seen, that without the axiom, that in every series of causes and effects there must be a First Cause, the reasoning is altogether inconclusive.

5. Or to put the matter otherwise: The argument for the existence of the Deity was stated thus: Something exists, therefore something must have existed from eternity. Granted, the opponent might say; but this *something* which has existed from eternity, why may it not be this very series of causes and effects which is now going on, and which appears to contain in itself no indication of beginning or end? And thus, without the assumption of the necessity of a First Cause, the force of the argument may be resisted.

6. But, it may be asked, how do those who have written to prove the existence of the Deity reply to such an objection as the one just stated? It is natural to suppose that, on a subject so interesting and so long discussed, all the obvious arguments, with their replies, have been fully brought into view. What is the result in this case?

The principal modes of replying to the above objection, that the series of causes and effects which now exists, may have existed from eternity, appear to be these.

In the first place, our minds cannot be satisfied with a series of successive, dependent, causes and effects, without something first and independent. We pass from effect to cause, and from that to a higher cause, in search of something on which the mind can rest; but if we can do nothing but repeat this process, there is no use in it. We move our limbs, but make no advance. Our question is not answered, but evaded. The mind cannot acquiesce in the destiny thus presented to it, of being referred from event to event, from object to object, along an interminable vista of causation and time. Now this mode of stating the reply,—to say that the mind *cannot thus be satisfied*, appears to be equivalent to saying that the mind is conscious of a principle in virtue of which such a view as this must be rejected;—the mind takes refuge in the assumption of a First Cause, from an employment inconsistent with its own nature.

7. Or again, we may avoid the objection, by putting the argument for the existence of a Deity in this form: The series of causes and effects which we call the *world*, or the *course of nature*, may be considered as a *whole*, and this whole must have a cause of its existence. The whole collection of objects and events may be comprehended as a single effect, and of this effect there must be a cause. This Cause of the Universe must be superior to, and independent of the

special events, which, happening in time, make up the universe of which He is the cause. He must exist and exercise causation, before these events can begin: He must be the First Cause.

Although the argument is here somewhat modified in form, the substance is the same as before. For the assumption that we may consider the whole series of causes and effects as a *single effect*, is equivalent to the assumption that besides partial causes, we must have a First Cause. And thus the Idea of a First Cause, and the axiom which asserts its necessity, are recognised in the usual argumentation on this subject.

8. This Idea of a First Cause, and the principles involved in the Idea, have been the subject of discussion in another manner. As we have already said, we assume as an axiom that a First Cause must exist; and we assert that God, the First Cause, exists eternal and immutable, by the necessity which the axiom implies. Hence God is said to exist necessarily;—to be a necessarily existing being. And when this *necessary existence* of God has been spoken of, it soon began to be contemplated as a sufficient reason, and as an absolute demonstration of His existence; without any need of referring to the world as an effect, in order to arrive at God as the cause. And thus men conceived that they had obtained a proof of the existence of the Deity, *à priori*, from ideas, as well as *à posteriori*, from effects.

9. Thus, Thomas Aquinas employs this reasoning to prove the *eternity* of God.* "Oportet ponere aliquod primum necessarium quod est per se ipsum necessarium; et hoc est Deus, cum sit prima causa ut dictum est: igitur Deus æternus est, cum omne necessarium per se sit æternum." It is true that the schoolmen never professed to be able to prove the *existence* of the Deity *à priori:* but they made use of this conception of necessary existence in a manner which approached very near to such an attempt. Thus Suarez† discusses the question, "Utrum aliquo modo possit *à priori* demonstrari Deum esse." And resolves the question in this manner: "Ad hunc ergo modum dicendum est: Demonstrato *à posteriori* Deum esse ens necessarium et a se, ex hoc attributo posse *à priori* demonstrari præter illud non posse esse aliud ens necessarium et a se, et consequenter demonstrari Deum esse."

But in modern times attempts were made by Descartes and Samuel Clarke, to prove the Divine existence at once *à priori*, from the conception of necessary existence; which, it was argued, could not subsist without actual existence. This argumentation was acutely and severely criticised by Dr. Waterland.

10. Without dwelling upon a subject, the discussion of which does not enter into the design of the present work, I may remark that the question whether an *à priori* proof of the existence of a First Cause be possible, is a question concerning the nature of our Ideas, and the evidence of the axioms which they involve, of the same kind as many questions which we have already had to dis-

* Aquin. Cont. Gentil. Lib. i. Chap. xiv. p. 21.
† Metaphys. Tom. ii. Disp. xxix. Sect. 3. p. 28.

cuss. Is our Conception or Idea of a First Cause gathered from the effects we see around us? It is plain that we must answer, here as in other cases, that the Idea is not extracted from the phenomena, but assumed in order that the phenomena may become intelligible to the mind;—that the Idea is a necessary one, inasmuch as it does not depend upon observation for its evidence; but that it depends upon observation for its developement, since without some observation, we cannot conceive the mind to be cognizant of the relation of causation at all. In this respect, however, the Idea of a First Cause is no less necessary than the ideas of Space, or Time, or Cause in general. And whether we call the reasoning derived from such a necessity an argument *à priori* or *à posteriori*, in either case it possesses the genuine character of demonstration, being founded upon axioms which command universal assent.

11. I have, however, spoken of our *Conception* rather than of our *Idea* of a First Cause; for the notion of a First Cause appears to be rather a modification of the Fundamental Idea of Cause, which was formerly discussed, than a separate and peculiar Idea. And the Axiom, *that there must be a First Cause*, is recognised by most persons as an application of the general Axiom of Causation, *that every effect must have a cause;* this latter Axiom being applied to the world, considered in its totality, as a single effect. This distinction, however, between an Idea and a Conception, is of no material consequence to our argument; provided we allow the maxim, that there must be a First Cause, to be necessarily and evidently true; whether it be thought better to speak of it as an independent Axiom, or to consider it as derived from the general Axiom of Causation.

12. Thus we necessarily infer a First Cause, although the Palætiological Sciences only point *towards* it, and do not lead *to* it. But I must observe further; that in each of the series of events which form the subject of Palætiological research, the First Cause is the *same*. Without here resting upon reasoning founded upon our Conception of a First Cause, I may remark that this identity is proved by the close connexion of all the branches of natural science, and the way in which the causes and the events of each are interwoven with those which belong to the others. We must needs believe that the First Cause which produced the earth and its atmosphere is also the Cause of the plants which clothe its surface; that the First Cause of the vegetable and of the animal world are the same; that the First Cause which produced light produced also eyes; that the First Cause which produced air and organs of articulation produced also language and the faculties by which language is rendered possible: and if *those* faculties, then also all man's other faculties;—the powers by which, as we have said, he discerns right and wrong, and recognises a providential as well as a natural course of things. Nor can we think otherwise than that the Being who gave these faculties, bestowed them for that purpose which alone is compatible with their nature:—the purpose, namely, of guiding and elevating man in his present

career, and of preparing him for another state of being to which they irresistibly direct his hopes. And thus, although, as we have said, no one of the Palætiological Sciences can be traced continuously to an origin, yet they not only each point to an origin, but all to the same origin. Their lines are broken indeed, as they run backwards into the early periods of the world, but yet they all appear to converge to the same invisible point. And this point, thus indicated by the natural course of things, can be no other than that which is disclosed to us as the starting point of the providential course of the world; for we are persuaded by such reasons as have just been hinted, that the Creator of the natural world can be no other than the Author and Governor and Judge of the moral and spiritual world.

13. Thus we are led, by our material sciences, and especially by the Palætiological class of them, to the borders of a higher region, and to a point of view from which we have a prospect of other provinces of knowledge, in which other faculties of man are concerned besides his intellectual, other interests involved besides those of speculation. On these it does not belong to our present plan to dwell: but even such a brief glance as we have taken of the connexion of material with moral speculations may not be useless, since it may serve to show that the principles of truth which we are now laboriously collecting among the results of the physical sciences, may possibly find some application in those parts of knowledge towards which men most naturally look with deeper interest and more serious reverence.

OF THE SUPREME CAUSE.

The first Induction of a Cause does not close the business of scientific inquiry. Behind proximate causes, there are ulterior causes, perhaps a succession of such. Gravity is the cause of the motions of the planets; but what is the cause of gravity? This is a question which has occupied men's minds from the time of Newton to the present day. Earthquakes and volcanoes are the causes of many geological phenomena; but what is the cause of those subterraneous operations? This inquiry after ulterior causes is an inevitable result from the intellectual constitution of man. He discovers mechanical causes, but he cannot rest in them. He must needs ask, whence it is that matter has its universal power of attracting matter. He discovers polar forces: but even if these be universal, he still desires a further insight into the cause of this polarity. He sees, in organic structures, convincing marks of adaptation to an end: whence, he asks, is this adaptation? He traces in the history of the earth a chain of causes and effects operating through time: but what, he inquires, is the power which holds the end of this chain?

Thus we are referred back from step to step, in the order of causation, in the same manner as, in the palætiological sciences, we were referred back in the order of time. We make discovery after

discovery in the various regions of science; each, it may be, satisfactory, and in itself complete, but none final. Something always remains undone. The last question answered, the answer suggests still another question. The strain of music from the lyre of Science flows on, rich and sweet, full and harmonious, but never reaches a close: no cadence is heard with which the intellectual ear can feel satisfied.

In the utterance of Science, no cadence is heard with which the human mind can feel satisfied. Yet we cannot but go on listening for and expecting a satisfactory close. The notion of a cadence appears to be essential to our relish of the music. The idea of some closing strain seems to lurk among our own thoughts, waiting to be articulated in the notes which flow from the knowledge of external nature. The idea of something ultimate in our philosophical researches, something in which the mind can acquiesce, and which will leave us no further questions to ask, of *whence*, and *why*, and *by what power*, seems as if it belonged to us;—as if we could not have it withheld from us by any imperfection or incompleteness in the actual performances of science. What is the meaning of this conviction? What is the reality thus anticipated? Whither does the developement of this Idea conduct us?

We have already seen that a difficulty of the same kind, which arises in the contemplation of causes and effects considered as forming an historical series, drives us to the assumption of a First Cause, as an Axiom to which our Idea of Causation in time necessarily leads. And as we were thus guided to a First Cause in order of Succession, the same kind of necessity directs us to a Supreme Cause in order of Causation.

On this most weighty subject it is difficult to speak fitly; and the present is not the proper occasion, even for most of that which may be said. But there are one or two remarks which flow from the general train of the contemplations we have been engaged in, and with which this work must conclude.

We have seen how different are the kinds of cause to which we are led by scientific researches. *Mechanical Forces* are insufficient without *Chemical Affinities;* Chemical agencies fail us, and we are compelled to have recourse to *Vital Powers;* Vital Powers cannot be merely physical, and we must believe in something hyperphysical, something of the nature of a *Soul.* Not only do biological inquiries lead us to assume an animal soul, but they drive us much further; they bring before us *Perception*, and *Will* evoked by Perception. Still more, these inquiries disclose to us *Ideas* as the necessary forms of Perception, in the actions of which we ourselves are conscious. We are aware, we cannot help being aware, of our Ideas and our Volitions as belonging to *us*, and thus we pass from *things* to *persons;* we have the idea of *Personality* awakened. And the idea of Design and *Purpose*, of which we are conscious in our own minds, we find reflected back to us, with a distinctness which we cannot overlook, in all the arrangements which constitute the frame of organized beings.

We cannot but reflect how widely diverse are the kinds of principles thus set before us;—by what vast strides we mount from the lower to the higher, as we proceed through that series of causes which the range of the sciences thus brings under our notice. Yet we know how narrow is the range of these sciences when compared with the whole extent of human knowledge. We cannot doubt that on many other subjects, besides those included in physical speculation, man has made out solid and satisfactory trains of connexion;—has discovered clear and indisputable evidence of causation. It is manifest, therefore, that, if we are to attempt to ascend to the Supreme Cause—if we are to try to frame an idea of the Cause of all these subordinate causes;—we must conceive it as more different from any of them, than the most diverse are from each other;—more elevated above the highest, than the highest is above the lowest.

But further;—though the Supreme Cause must thus be inconceivably different from all subordinate causes, and immeasurably elevated above them all, it must still include in itself all that is essential to each of them, by virtue of that very circumstance that it is the Cause of their Causality. Time and space,—Infinite Time and Infinite Space,—must be among its attributes; for we cannot but conceive Infinite Time and Space as attributes of the Infinite Cause of the Universe. Force and Matter must depend upon it for their efficacy; for we cannot conceive the activity of Force, or the resistance of Matter, to be independent powers. But these are its lower attributes. The Vital Powers, the Animal Soul, which are the Causes of the actions of living things, are only the Effects of the Supreme Cause of Life. And this Cause, even in the lowest forms of organized bodies, and still more in those which stand higher in the scale, involves a reference to Ends and Purposes, in short, to manifest Final Causes. Since this is so, and since, even when we contemplate ourselves in a view studiously narrowed, we still find that we have Ideas, and Will, and Personality, it would render our philosophy utterly incoherent and inconsistent with itself, to suppose that Personality, and Ideas, and Will, and Purpose, do not belong to the Supreme Cause from which we derive all that we have and all that we are.

But we may go a step further;—though, in our present field of speculation, we confine ourselves to knowledge founded on the facts which the external world presents to us, we cannot forget, in speaking of such a theme as that to which we have thus been led, that these are but a small, and the least significant portion of the facts which bear upon it. We cannot fail to recollect that there are facts belonging to the world within us, which more readily and strongly direct our thoughts to the Supreme Cause of all things. We can plainly discern that we have Ideas elevated above the region of mechanical causation, of animal existence, even of mere choice and will, which still have a clear and definite significance, a permanent and indestructible validity. We perceive as a fact, that we have a Conscience, judging of Right and Wrong; that we

have Ideas of Moral Good and Evil; that we are compelled to conceive the organization of the moral world, as well as of the vital frame, to be directed to an end and governed by a purpose. And since the Supreme Cause is the cause of these facts, the Origin of these Ideas, we cannot refuse to recognise Him as not only the Maker, but the Governor of the World; as not only a Creative, but a Providential Power; as not only a Universal Father, but an Ultimate Judge.

We have already passed beyond the boundary of those speculations which we proposed to ourselves as the basis of our conclusions. Yet we may be allowed to add one other reflection. If we find in ourselves Ideas of Good and Evil, manifestly bestowed upon us to be the guides of our conduct, which guides we yet find it impossible consistently to obey;—if we find ourselves directed, even by our natural light, to aim at a perfection of our moral nature from which we are constantly deviating through weakness and perverseness;—if, when we thus lapse and err, we can find, in the region of Human Philosophy, no power which can efface our aberrations, or reconcile our actual with our ideal being, or give us any steady hope and trust with regard to our actions, after we have thus discovered their incongruity with their genuine standard;—if we discern that this is our condition, how can we fail to see that it is in the highest degree consistent with all the indications supplied by such a philosophy as that of which we have been attempting to lay the foundations, that the Supreme Cause, through whom man exists as a moral being of vast capacities and infinite hopes, should have Himself provided a Teaching for our ignorance, a Propitiation for our sin, a Support for our weakness, a Purification and Sanctification of our nature?

And thus, in concluding our long survey of the grounds and structure of Science, and of the lessons which the study of it teaches us, we find ourselves brought to a point of view in which we can cordially sympathize, and more than sympathise, with all the loftiest expressions of admiration and reverence and hope and trust, which have been uttered by those who in former times have spoken of the elevated thoughts to which the contemplation of the nature and progress of human knowledge gives rise. We cannot only hold with Galen, and Harvey, and all the great physiologists, that the organs of animals give evidence of a purpose;—not only assert with Cuvier that this conviction of a purpose can alone enable us to understand every part of every living thing;—not only say with Newton that "every true step made in philosophy brings us nearer to the First Cause, and is on that account highly to be valued;"—and that "the business of natural philosophy is to deduce causes from effects, till we come to the very First Cause, which certainly is not mechanical;"—but we can go much further, and declare, still with Newton, that "this beautiful system could have its origin no other way than by the purpose and command of an intelligent and powerful Being, who governs all things, not as the soul of the

world, but as the Lord of the Universe; who is not only God, but Lord and Governor."

When we have advanced so far, there yet remains one step. We may recollect the prayer of one, the Master in this School of the Philosophy of Science: "This also we humbly and earnestly beg; —that human things may not prejudice such as are divine;—neither that from the unlocking of the gates of sense, and the kindling of a greater natural light, any thing may arise of incredulity or intellectual night towards divine mysteries; but rather that by our minds, thoroughly purged and cleansed from fancy and vanity, and yet subject and perfectly given up to the divine oracles, there may be given unto Faith the things that are Faith's." When we are thus prepared for a higher teaching, we may be ready to listen to a greater than Bacon, when he says to those who have sought their God in the material universe, "Whom ye ignorantly worship, Him declare I unto you." And when we recollect how utterly inadequate all human language has been shown to be, to express the nature of that Supreme Cause of the Natural, and Rational, and Moral, and Spiritual world, to which our Philosophy points with trembling finger and shaded eyes, we may receive, with the less wonder but with the more reverence, the declaration which has been vouchsafed to us:

IN THE BEGINNING WAS THE WORD, AND THE WORD WAS WITH GOD, AND THE WORD WAS GOD.

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THE LIFE OF LUCILIO VANINI.

To Mr. ****.

SIR,

YOU do me more Honour than I deſerve, when you ask me again for what I had collected concerning LUCILIO VANINI's Life. You remember that ſince the Year 1710, I was to have continued *l'Hiſtoire des Ouvrages des Savans*, which Work was always interrupted by the learned Diſtractions of the Author, and finally ſtopped by his laſt Illneſs; and by the Occupations of his Brother †, who had ſuſtained

The Occaſion of this Work.

† Mr. *Baſnage*, Miniſter of the *French* Church at the *Hague*, made ſeveral Abſtracts for his Brother the Advocate, who fell ill in 1709.

that Burthen from time to time, and would no longer be troubled with it. I had then collected ſome Materials for the Continuation of a Work which deſerved my whole Attention, when Providence called me from your City to *Amſterdam*; and a few Months after from *Amſterdam* to *England*.

The Hiſtory of *Vanini*, by Mr. Schram

Among thoſe Materials deſigned for the Journal, you had heard me ſpeak of a *Latin* Book printed in *Germany*, under the Title of * *The Life and Writings of the famous Atheiſt* JULIUS CÆSAR VANINI; *wherein the Author treats of his Birth, his Behaviour, his Education, and of his tragical End; the Whole taken from his Writings, or other Authors worthy of Credit.* I made an Abſtract of that Book, and being at Work about it, I often wiſhed to ſee with my own Eyes, the ſtrong and weak Side of VANINI, I mean by reading all his Works. By good Luck I found them in your Library, you was pleaſed to lend them me, I read them from one end to the other, and I made uſe of 'em to give my Abſtract all the Certainty required from a faithful Journaliſt. I read my *MS.* to ſome of my Friends, who approved it; I do not now remember, if I did not ſhew it, to you likewiſe. Be that as it will, having ſince left your City, and Mr. *Mortier*, for whom I was to have continued at *Amſterdam, les Nouvelles des la Republique des Letres*, being dead, my Abſtract was baniſhed among my old Papers.

* *De Vita et Scriptis famoſi Athei* Julii Cæſaris Vanini *tractatus ſingularis, in quo Genius, & Mores & Studia cum ipſa Morte horrenda à Scriptis ſuis rarioribus & aliis fide dignis Authoribus ſelecta ſunt, &, ne cui offendiculo ſorent, errores illius ſimul ſunt refutati, à* Johanne Mauricio Schramm. *Cuſtrini. Typ. & ſumpt.* Godofredi Heininchii, *Regis Regim.* Nov-March, Typographi, 1709.

A new Book, which appeared the Year following, did not at all encourage me to take it from thence. Mr. *de la Croſe* publiſhed his *Entertainments upon divers Subjects of Hiſtory, Literature, Religion and Criticiſm* *. The fourth of his Entertainments is *A Diſſertation upon Atheiſm*, which is well worth reading. He ſpeaks there of ſeveral Atheiſts, and VANINI is introduced in his turn. I muſt own I was a little diſpleaſed when I read that Paſſage of his Diſſertation, becauſe it ſeemed to me, that the Author had compiled there with pretty good Judgment, the chief things to be known concerning that Infidel, and taken from me Materials, which I thought the more entertaining and curious, becauſe no one had ever given us any thing in *French* upon that Subject. I condemned therefore my MS. to remain where I had put it, and it was going to rot there at Eaſe, if you had not asked me for it again in your laſt Letter. I ſhould yet refuſe it you by a Principle of Modeſty; but the Friendſhip and Obligations I owe you, will not permit it. I chuſe rather to reviſe my MS. to reform it, to correct and even to augment it, than to diſappoint you a ſecond time. Beſides, Mr. *de la Croſe* has omitted ſeveral important Remarks, which I have ſupplied, and perhaps ſome will rather read VANINI's Life, in a little Volume by itſelf, than in the middle of a tedious Diſſertation. After all, Sir, you are Maſter of the MS. read it with ſome Attention, and if it doth not pleaſe you, do with it as they did with VANINI; I aſſure you I ſhall not take it ill in the leaſt.

Mr. *de la Croſe's* Work.

* The Book is printed at *Amſterdam*, by *Roger*. 1711.

II. I ſhall divide into five or ſix Articles, all what I have to tell you about our *Neapolitan*. I ſhall at firſt ſpeak of his Birth, and his Parents, then of his Learning and Præceptors; afterwards of his Travels, then of his Writings, and of the Impiety hid in them, which diſcovers itſelf by Degrees; and conclude with his tragical Death, and a View of his Character, in oppoſition to the Apologies of his Advocate, * and the careleſsneſs of a celebrated Author, who in his *Penſées Sur la Comete* ‡, has cried up our VANINI for an honeſt Man and a true Martyr of Atheiſm: This laſt Article will perhaps be curious enough. And this is the Method I intend to obſerve in this Letter: I wiſh you may not have Reaſon to repent your Curioſity, nor I my Complaiſance.

Vanini's Birth, his native Country and Parents.

III. LUCILIO VANINI, was born at *Taurofano* § in the Kingdom of *Naples*, and not at *Naples* itſelf, as all the Editions of *Moreri's Dictionary* intimate, not even excepting the laſt by M. *Du Pin* **. I place his Birth in the Year 1585, and not 1579, as by an overſight Mr. *La Croſe* has done. The Day and Month are not known, and I gueſs only at the Year, from a Paſſage of his *Dialogues upon Nature*, where our Infidel makes *Alexander* his Admirer ſay to him, you are hardly thirty Years old, and you have enriched the Publick already with I do not know

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* M. *Arpe. Apologia pro Julio Cæſare Vanini, Neapolitano. Coſmopoli. Typis Philaletheis.* 1712.

‡ *Tome 3. Pag.* 356. *& ſuivantes de Pedition de* 1704.

§ 'Tis himſelf that acquaints us of it in the 56th Dialogue, pag. 424. *Ego cum Tauriſanum patriam meamnobiliſſimam & velut in orbis annulo gemmam, peterem.* Mr. *de la Croſe* calls it the City *Tauriſano*; but I find no ſuch City in the Maps, but a Market Town of that Name, a few Leagues *from Caſtro*

** The Edition of 5 Vol. Fol. 1713.

how

how many illuſtrious Monuments of Learning, which have acquired you a great deal of Honour! Thoſe Dialogues having been printed at *Paris* in 1616, it is probable, if he ſays true, that he came into the World towards the end of 1585, or the beginning of the Year following.

His Father's Name was *John Baptiſta Vanini*, Steward to Don *Francis de Caſtro*, Duke of *Taurofano*, Viceroy of *Naples*, and afterwards Ambaſſadour of *Spain* to the Court of *Rome*. His Mother was called *Beatrix Lopes de Noguera*, ‡ and if we may believe her Son, who omits nothing to make himſelf eſteemed, ſhe was of a *Spaniſh* Family of Diſtinction. I would not relate here what he tells us of his Father, if it did not give us to underſtand how much Vanity and Puerility there was in the Genius of our Atheiſt. He ſays that his Father * being near his End, and the Phyſicians having acquainted him with it, ſhewed ſuch a Deſire for an immortal Life exempt from all Languiſhing and Slothfulneſs, that he aroſe immediately from his Bed, pronouncing theſe Words of *Veſpaſian, it doth not behove me to die any otherwiſe than ſtanding*. As if a *Saying* did not looſe of its Elegancy in paſſing from the Mouth of an Emperor into that of a Steward or Farmer.

His Father.

His Mother.

A ridiculous Circumſtance of his Father's Death.

His Son, being born, was called LUCILIO, but he became too arrogant to be contented with an ordinary Name, and we ſhall ſoon ſee how he was induced to take up another §.

His Chriſtian Name.

IV. He was a great lover of Learning from his Infancy, and applied himſelf to it to ſuch

His Studies.

‡ Dial. 424.

* *Amphit. p.* 153. *Vid. Sueton. in Veſpaſian. Cap.* 24.

§ *Garaſe* ſays, That "the miſerable Lucilio changed his Name three or four times, according to the Country——

"for

ſuch a Degree, that it ſoon filled him with Preſumption. His Father ſent him to *Rome*, to ſtudy there Philoſophy and Divinity: His Maſter was a certain *Carmelite* Fryer, called
B. Argotti. *Barthelemi Argotti*, who at that time was very famous. VANINI brags of it very much in his Works; he tells us of his Wiſdom, and of his ſedate Behaviour, and cries him up for a *Phœnix of the Preachers of his time* †. In the ſame manner he mentions another *Carmelite*,
J. Bacon. called *John Bacon*, an Ornament ſays he, to the AVERROIST's, *formerly my Præceptor, and of whom I have learned to ſwear by none but* AVERROES. This he tells us in his *Amphitheatre* §; a fine Expreſſion for an Author, who propoſes there to refute the antient and modern Atheiſts!

Vanini ſtudies Phyſic and Aſtrology. From *Rome* he returned to *Naples*, according to Mr. *Schramm*'s Conjecture **, where he continued his Study of Philoſophy. He delighted much in Natural Philoſophy, and out of love for that Science, he applied himſelf ſome time to *Phyſick*, which is one of its Branches. Aſtronomy alſo imploy'd him conſiderably, which inſenſibly flung him into the Whimſies of Aſtrologers. But he beſtowed beſt part of his

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" for being in *Gaſcony* he called himſelf *Pompeio*, and among " the Nobility he was known by no other Name. In *Holland* " his Name was *Julius Cæſar:* When he was about printing " his Book at *Paris* he ſtiled himſelf *Folio Cæſare Vanino*; " and printing his *Amphitheatrum* at *Lyons*, he added to it " *Tauriſano*; and at *Tholoſe*, when he was tried, he was " called *Sieur Lucilio. Garas.* Doct. Cur. p. 1024.

† Dial. p. 205. *Virum optimum & ſapientiſſimum.*

§ P. 17. *Duce* Averroe, *in cujus verba jurare eum* Joannes Bacconius, *Averroiſtarum princeps meritiſſimus, olim præceptor coegerat.*

** *De vita & Scriptis* Julii Cæſaris Vanini. p. 6.

time

time upon Divinity, ſuch as it was then, and is ſtill now taught in that Country. He doth not ſeem to be well pleaſed with it in his Books, and he ſlips no Opportunity of giving a ſevere rub to the *Scholaſticks*. THOMAS AQUINAS, among others, although very much reſpected by Men of his Party, ſeems to him but a weak Reaſoner againſt Impiety. He complains in his Preface to the *Amphitheatre*, that although that Father's Work againſt the *Pagans* was very learned; yet none of the Objections of the Atheiſts was there either well ſtated or confuted *. Nevertheleſs, he proteſts, he is of Opinion with Pope *John* XXII. who in the Conſecration of this Saint, pronounced freely; he had done as many Miracles, as he had decided of hard Queſtions. 'Tis pity that Miracles ſhould have failed him, when he wanted them moſt, I mean againſt Atheiſts: But probably VANINI would give us to underſtand, that the Miracles of his Church are of no great Efficacy againſt Libertines.

V. When he had finiſhed his Studies, he got himſelf received a Prieſt, and as he had a great deal of Fire he ſoon came to be a Preacher. I ſhall not take upon me to tell you, whether his Sermons were excellent or no: But you will judge very advantageouſly of them, if you take his word for it. They were none of thoſe Monks Sermons, drawn from *Phœbus* and embroidered with continual Miracles, after the manner of the Orators, on the other ſide of the *Alps*: But they were elaborate Diſcourſes, full of Juice, and nouriſhed in ſome meaſure with the Subſtance of Truth. You may judge of it, by a Fragment, which he gives us in

He is made a Prieſt. An Idea of his manner of Preaching.

* *Amphitheatr. in præfat.*

his

his thirtieth Dialogue. He remembers, ſays he, that preaching one Day upon the Queſtion, *Why God made Men?* he reſolved it by the famous Scale of AVERROES, by virtue of which it was neceſſary there ſhou'd be a gradation from the loweſt of Beings to the moſt high. *Ut Nempe eſſet aliquid quod interceſſione ſuo ſummis ima coaptaret.* Afterwards he himſelf propoſes this Scale according to the AVERROISTS; for it is permitted to every Philoſopher to make his own, as to Divines to lay out their common Places.

Averroes's Scale.

1. The firſt matter according to our *Italian*, is the ſole *Power*, the pure *Act*, to wit *God*.

2. Next to *God* are the *Immaterial Subſtances*.

3. Next to *Matter*, is the *form* of *Corporeity*.

4. Betwixt theſe two are two Animal *Souls*, the one *Vegetative*, the other *Senſitive*.

5. Above them are the *Underſtanding*, being leſs than the *Intelligences*; for exiſting in Matter, it is immaterial and ſeparable from Matter; diſtinct from it by its Eſſence, and confuſed with it for as much as it informs or inſtructs it *.

What I obſerve particular on this Head, is, that ſome celebrated Divines, among the

* Ipſe olim (*'tis* Vanini *ſpeaks*) concionando hanc quæſtionem reſolvi, *Cur homo à Deo fuiſſet creatus?* Ut nempe aliquid eſſet, quod interceſſione ſua ſummis ima coaptaret,—— Materia prima ſecundum Averroïtas, ſola parentia, actus purus, ſolus *Deus*. Prope Deum *Subſtantiæ immortales*. Prope *Materiam forma Corporeitatis*. Inter hæc *anima* brutæ duæ, *Vegetaus* & *Sentirus*; & ſuper has potior *Intellectus*, minor *Intelligentiis*. Etenim in materia exiſtens immaterialis, ſed à materia ſeparabilis; ſeparatus per eſſentiam, non ſeparatus per informationem. *Dial.* p. 234.

Proteſtants

Proteſtants have adopted *Plato*'s Scale, after what Mr. *Fontenelle* has ſaid of it, to ſhew forth its Invalidity. "Some are mightily em-"barraſſed about the infinite Space, which is "between *God* and Human Creatures (ſays that "bright Man) and they fill it up with *Genius*'s and "*Dæmons*; but with what ſhall be filled up that "infinite Space there is between *God* and thoſe "*Genius*'s and *Dæmons?* For the diſtance from "*God* to any Creature whatever, is infinite. "As it is neceſſary, in a manner of ſpeak-"ing, for *God*'s Action to traverſe an infi-"nite *Vacuum* to reach thoſe *Dæmons*, it might "as well come at once to Men, ſince they "are but a few Degrees diſtant from them, "and there is no proportion at all to the "firſt Diſtance. When *God* treats with Men "by means of Angels, that is not to ſay, "that Angels are neceſſary for this Com-"munication, as *Plato* pretended; *God* employs "them for Reaſons, which Philoſophy will ne-"ver be able to diſcover *". Nevertheleſs our VANINI would penetrate every thing, and that in his Sermons. AVERROES held there St. PAUL and St. THOMAS's Place. It is true the Hearers did not comprehend much of it; but that was to them a reaſon for approving his Diſcourſe; for many People readily ſacrifice their Reaſon to the ſound of ſome hard Words and obſcure Terms.

VI. Now our VANINI wanted nothing but the Study of the Law, to give his Learning that Air of Univerſality, which ſo many Men are fond of. He calls himſelf *Doctor in utroque Jure*, in the Title Page of his Dialogues, and

He ſtudies the Law and is made Doctor.

* *Fontenelle* Hiſt. des Oracles. Ch. vi. p. 74.

it appears indeed, that he was not a Novice in the Civil Law, nor even the Canonical.

His ſtay at *Padua*, and his laudable Poverty.

VII. From *Naples* he went to *Padua*, where the goodneſs of the Air, the ſoftneſs of the Climate, and eſpecially the Converſation with Men of Letters, detained him ſome Years. He there repeated all the Sciences which he had run over, and although extreamly poor, he ſtudied with all the Ardour which a Diſpoſition hot of it Self, and moreover inflamed by a prodigious Ambition, can furniſh. *All is warm*, * ſays he, *to thoſe that love; have I not ſuſtained at* Padua *the greateſt Froſt in Winter with a poor and thin Dreſs, animated only with a Deſire of Learning?* He ſays in his *Amphitheatre*, that having finiſhed his Studies in that City, *he found himſelf in a Capacity to go through all* Europe, *to viſit the Univerſities and aſſiſt at the Aſſemblies and Conferences of the Learned* †. He boaſts afterwards that he had done it and perfected himſelf in all kind of Learning.

His Favourite Authors.

VIII. His favourite Authors were ARISTOTLE, AVERROES, CARDAN and POMPONATIUS. Thoſe Names are ſufficiently known; M. *Bayle* has given us a faithful pourtrait of them in his *Critical Dictionary*, and it may be ſufficient here to obſerve in what Eſteem our VANINI held them.

Ariſtotle.

As to *Ariſtotle*, that went even to Admiration; he calls him *the God of Philoſophers*, ** *The Dictator of human Wiſdom, and the Sovereign Pontiff of the Sages.* He owns that he devoted himſelf entirely to him, and that he had him continually in his Hands, before his Eyes, and

* Dial, p. 352.

† See the Preface of his *Amphitheatre.*

** De Amirand, Natur. Arcan. Dial. 11.

in

in his Mind. He borrows from him in ſeveral Places, without naming him, and if it was worth while, I could eaſily make it appear, that he is not the Inventor of all thoſe notable Inquiries into the Myſteries of Nature, which he retails with ſo much Oſtentation, and about which ALEXANDER is introduced admiring him, as if they were all new Diſcoveries.

The Syſtem of AVERROES, which is but a Branch of that of *Ariſtotle*, was ſo much to his liking, that he took care to recommend this Author to his Diſciples in their beginning, and even when they had no Tincture of Philoſophy at all. He himſelf acquaints us with this Particularity, in his Dialogues ††. *When the Buſineſs was*, ſays he, ſpeaking of one of his Scholars, *to initiate him in the Myſteries of Philoſophy, I took great Care, that he ſwore to no ones Name; I contented my ſelf with putting into his Hands* AVERROES's *Books, which he read with ſuch Greedineſs, and by which he profited ſo much, that he ſoon took upon him to confute the Impertinencies of the Scholaſticks, who talk ſuperficially upon Matters.*

POMPONATIUS, a famous AVERROIST, had left behind him at *Padua*, many Followers and ſeveral Writings. Our VANINI read them greedily, and confirmed himſelf ſoon in the ſame Sentiments. Mr. *Schramm* believes VANINI had ſtudied under *Pomponatius* at *Boulogna* *, and that they had ſeen each other; but he doth not take Notice that *Pomponatius* was born in 1462, and that *Vanani* died in 1619, but 34 Years old according to my Calculation. Be that as it will, he calls him always his *Divine Maſter, Divinum*

Schramm's Miſtake.

†† *Amphith.* p. 350.

* *Schramm de Vita & Scriptis Vanini.* p. 27.

Præceptorem, and beſtows great Encomiums upon his Works †. The Book where he treats *about Enchantments*, and which was looked upon as a dangerous one, ſeemed to him a Golden Treatiſe: *Liber aureus*. Another *about Deſtiny* charmed him, and a third about Cauſes and Natural Effects, deſerved alſo his higheſt Admiration. In ſhort he had hardly any Doubt left, but *the Soul of* Averroes *had tranſmigrated into* Pomponatius's *Body* (*).

Cardanus, whether he was a Fool or an Atheiſt?

CARDAN is alſo one of thoſe Authors, whom VANINI had ſtudied much. He praiſes him and finds fault with him in ſeveral Places. In one place, he gives him the Character of a Man of great Senſe, and giving little Credit to Superſtition ††. NAUDE doth not agree to the firſt Article, for he maintains that he was perfectly ſtupid; which appears ſufficiently from his own Writings, when he relates the Tranſactions of his Life. Mr. *Bayle*, a Man of a clear Underſtanding, finds in him rather the Character of a Superſtitious Man, than of an Atheiſt, and he agrees with *Naudé*, that *Cardan*'s chief Character was Folly **, of which, as he pleaſantly expreſſes it, his Underſtanding could paſs for nothing but an Appendix. And truly how can a Man like CARDAN (who out of a ſtupid Ingenuity owns himſelf guilty of the moſt heinous and diſagreeable Vices, without excepting even that of Prophanation) paſs for one in his Senſes with thoſe who have preſerved theirs §.

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† Divinus Præceptor in Aureo opuſculo de incantationibus. Dial. p. 374.

* *Amphit. Diſſertat.* VI. p. 36.

†† Dial. p. 203. 204.

** See Dict. Crit. The Article of *Cardan*.

§ Idem ibid.

Another

Another Folly; *Cardan* and *Pomponatius* had both writ upon the *Immortality of the Soul*, and oppoſed it when they ſeemed to eſtabliſh it. *Pomponatius* began it, and made himſelf many Enemies, by advancing this very delicate Propoſition, *viz.* That ſince it was impoſſible to prove it by Natural and Philoſophical Reaſons, the ſureſt way was to have recourſe to Revelation †. *Cardan* maintained the ſame thing, and copied *Pomponatius*. Theſe two uniform Treatiſes upon the ſame Matter, gave them a very bad Repute; and the truth of the Matter is, that they did not manage their Orthodoxy with any Conduct. They are not contented to attack there the Spirituality and Immortality of our Souls, by the Principles of *Ariſtotle*'s Philoſophy; but alſo defend Atheiſts, as being honeſt Men, whoſe diſintereſted Virtue is more Praiſeworthy, than that of the moſt couragious Defenders of the Immortality. Some would have advanced in our times, *that Atheiſm is not worſe than Idolatry*; I do not know if they have not ſtopped there, becauſe they dared not go any farther. CARDAN being bolder, made the Scales to turn in Favour of Atheiſm; the Paſſage is ſo remarkable, that I cannot help tranſlating it here, ſo much the rather becauſe Mr. *Bayle* has not quoted it, to my Knowledge, in *the Continuation of his Various Thoughts upon Comets*. "Let us now ſee ***, ſays he, whether the Belief of Immortality makes Men "more virtuous and happy. As for my part, "I do not perceive it contributes any thing "towards it. We ſee in *Cicero* and *Diogenes* "*Laertius*, that the *Epicureans* were more up-

Cardan and Pomponatius have both writ on the Immortality of the Soul

† See *Dict. Hiſtor. & Critic.* The Article of Pomponatius.

*** *Cardanus De* immortal. anim. Cap. 2. fol. 33.

"right

" right and honeſt, and had more true Good-
" neſs towards Men, than the *Stoicks* or *Pla-*
" *tonicks*. The Reaſon is, if I miſtake not,
" what *Galen* advances, that *Men grow good or*
" *bad by Cuſtom* ††. But no Body truſts them
" who make no Profeſſion of an unſhaken Up-
" righteouſneſs; and therefore they are obliged
" to obſerve more their Honour than others,
" and to prove themſelves ſuch to the Publick,
" for fear Men ſhould think their Practices
" are according to their Sentiments. Hence it
" is that few Men now a-Days equal the Faith
" of Uſurers; which otherwiſe lead a very
" bad Life. Let it be obſerved alſo, that the
" Sect of *Phariſees*, who believed in the Re-
" ſurrection and Immortality of the Soul, never
" ceaſed proſecuting *Jeſus Chriſt*; and that the
" *Saducees*, another Sect, which rejected both
" theſe Articles, attacked him but very ſeldom,
" once or twice at moſt, and in ſuch a Manner
" that it cauſed him no great Uneaſineſs. A-
" gain, if you compare the Lives of *Pliny* and
" *Seneca*, their Lives I ſay, and not their Words,
" you will find that *Pliny* with his Belief of
" the Mortality of the Soul, ſurpaſſes *Seneca*
" in his moral Behaviour as much, as he *Pliny*
" in his Diſcourſe upon Religion and Virtue.
" The *Epicureans* cultivated Honeſty, they en-
" tertained very officiouſly the Children of their
" Pupils, and maintained at their Charges the
" Families of their deceaſed Friends. They
" were looked upon every where as honeſt
" Men, altho they did not regard much the
" Worſhip of the Gods, and denied their Ex-

†† That contradicts his Principle, proving the Inequality of the Sects.

iſtence

"istence very strongly*. It happens also from "that flattering Opinion of another Life, that "the *Wicked* have room to exert their Passions; "the *Good* suffer many things contrary to the "Welfare of Society; and the Laws sustain "a considerable Shock, in as much, as upon "Consideration of Religion, they are softened "to such a Degree that often the very Foundation "of the Publick Good, and the Ease of Mankind lies at Stake. Neither doth it seem to "me, that this Belief of Immortality, makes "Men more couragious. For *Brutus* was no "more so than *Cassius*; and if we will say the "Truth, the Actions of *Brutus* were rather "more cruel than those of *Cassius*. For the last "treated the *Rhodians*, altho' great Enemies of the "righteous Cause, in a more favourable manner, than *Brutus* had done the Cities where "he commanded, and which were in Alliance "with him. And lastly, what shall we say? "Is it not *Brutus*, the same *Brutus* the Stoick, "who delivered the Republick into *Anthony*'s "Hands, because he had saved it to no purpose, altho' according to Law; after *Cassius* "had rescued it by his good Conduct". I have copied the whole Passage for several Reasons. First, to make *Cardan*'s Character known, and the Value one ought to put upon his Writings, and especially upon that about the Immortality of the Soul. Secondly, to expose *Vanini*'s Character at the same time, who retails those very Thoughts in his *Dialogues*, and no Doubt approves them †. Thirdly, to make it appear that the *Paradoxes* which have been lately vented a-

* They did not deny it absolutely, but only stammered upon this Article. *Epicurum Balbutientem. De natura Deorum.*

† Dial. p. 328.

broad,

broad, and the *Examples* alledged to that Purpoſe, are not ſo new as ſome may imagine. And laſtly, to have an Opportunity of ſhewing our Acknowledgment to Mr. *Bayle*, for that being ſupported by many Reaſons, furniſhed him by *Cardan*, he yet was honeſt enough to keep an even Balance between *Religion* and *Atheiſm*; maintaining againſt the *Italian* Philoſopher, that it was not true that Religion had done more harm than good in the World, as he expreſſes himſelf in *Section* 131, of his *various Thoughts*, &c. He believes even that Religion inſpires more Courage than Atheiſm; for ſays he in the ſame Place, *With Cardan's Leave: A Society of Atheiſts, as being incapable of adminiſtring to each other Motives of Religion to make them courageous, cou'd eaſier be diſperſed than a Society of Men that worſhip ſome Deity.* Behold here two famous Authors in a Contradiction about the Power of the Influence of Atheiſm! This is not a proper Place to examine theſe Sentiments; let it ſuffice that we have juſtified in Part the Judgment of Mr. *Naudé* upon *Cardan*'s Philoſophy, one of the great Maſters of our *Vanini*. *Pomponatius* had already treated upon the ſame Topick. I ſhall quote here ſome Pieces out of his Book of *the Immortality of the Soul*, by which you may judge of the reſt *. He is very well perſuaded that the Doctrine of the Immortality of the Spirits, doth not diſpoſe Men to be wicked, and that ſince they naturally love Felicity and hate Miſery; to make them honeſt it ſuffices to ſhew them, *that the Happineſs of Life conſiſts in the Practice of Virtue, and Miſery in the Practice of Vice. He adds, that thoſe who inculcate Mortality of the Soul, open a Way to the moſt per-*

* See Dict. Hiſt. Crit. Article, *Pomponatius*.

fect

fect Virtue, which is that which hath not in View any Recompenſe or Chaſtiſement. He alſo ſays, that thoſe Men are brutal, to whom the Immortality of the Soul muſt be propoſed as a Bribe: And that probably there are ſome Authors who have taught that Doctrine, without believing it themſelves, and uſed that Stratagem to reſtrain the ſenſual Inclinations of brutal Minds *. All thoſe Remarks, adds Mr. *Bayle*, do not remove the Difficulty. But here is a more reaſonable Thought, founded upon Facts. He ſays, *that a great Number of wicked People believe the Immortality of the Soul, and that many Saints and juſt Men do not believe it.* Here is the whole Paſſage which Mr. *Bayle* has not tranſlated. " And it is not generally true that they " are debauched People, who eſtabliſh the Mor- " tality of the Soul; neither is it true, they are " all wiſe Men who believe the Immortality: For " it is evident that abundance of ill Livers have " Faith, but are led aſtray by their Paſſions; " and on the contrary we know for certain, that " a great Number of wiſe and juſt Men held " the Mortality of the Soul. *Plato* tells us in " the firſt Book of his *Republick*, that the Poet " *Simonides*, an excellent and divine Man in all " Reſpects, was of that Number. *Homer*, " according to *Ariſtotle*'s Obſervation in his " Treatiſe *upon the Soul* Ch. 2. made no Diſtin- " ction betwixt Senſe and Underſtanding: And " who is ignorant of *Homer*'s Merit? *Hippo-* " *crates* and *Galen*, Perſons whoſe Probity was " no ways inferior to their Knowledge, were " of the ſame Opinion. *Alexander Aphrodiſeus*, " the great *Alfarabus*, *Abubacer*, *Avempacius*,

* Theſe are Mr. *Bayle*'s Words, Dict. Hiſt. & Crit. Art. *Pomponatius*.

" and among the reſt *Plinius* and *Seneca*, and " many others, are not far from this Sentiment". *Seneca* in his 54th Epiſtle, *Lib.* VII. ſays in plain Terms, that the Soul is mortal. And he expreſſes himſelf yet clearer in his Epiſtle to *Marcia*, where he ſpecifies the Names of a great Number of other learned Men, who believed the ſame †.

Here it appears, how *Cardan* and Mr. *Bayle* do not agree about the influence of Atheiſm: Beſides, *Pomponatius* does not hold the ſame with *Cardan* concerning *Seneca*. *Cardan*, makes him a *Stoick* and a good Orator, but not a very honeſt Man: *Pomponatius* makes an *Epicurean* of him, in point of the Mortality of the Soul, and yet a very good Man. However thoſe three Authors, *Cardan*, *Pomponatius* and *Bayle*, agree in this Point; that *Atheiſm does not make Men worſe than they would be otherways*. Now that *Cardan* and *Pomponatius* were profeſſed Infidels, notwithſtanding their preliminary Proteſtations in thoſe two Treatiſes, is ſtrenuouſly denied by *Bayle*; and indeed natural Equity demands that we ſhould ſuſpend our Judgment upon Circumſtances only, unleſs by manifeſt Prophanations Authors pull off the Mask, as VANINI and others have done. VANINI is not ſo equitable as *Bayle*, towards the two *Italians* juſt now mentioned. *Pomponatius* and *Cardan* *, ſays he, *were Men full of Knowledge and Learning. They were ſo little diſtant from my Sentiments, that each of them has given us a Treatiſe on the Immortality of the Soul. I own ingenuouſly, I don't know as yet their Sentiments upon that Head and the manner in which they have expreſſed themſelves, for thoſe two Books*

Mr. *Bayle* has a better Opinion of them than of *Vanini*.

† *Pomponat.* De immortalitate anime, p. 119.
* Amphit. Diſſertat. 28.

are

are not yet come to my Hands, nor have they appeared at the Fairs of Franckfort, *or in the Shops of our Lutheran and Calviniſt Bookſellers. After all, I do not know, if they have not done as* Agrippa, *who has compoſed ſo many Books about the evocation and conjuration of* Dæmons, *although that arch Knave* * *believed nothing of it, after the Example of all thoſe Necromancers, who impoſe on the Vulgar.* See the firſt Book *De vanitate Scientiarum*, and the beginning of every Volume, where *Agrippa* openly denies the Exiſtence of *Dæmons.*

Thus our Atheiſt furniſhes us deſignedly with a Key to his pernicious Works. That Method of attacking, when one ſeems to defend, is not new. *Carneades* uſed it ſometimes: *Cicero* did as much in his philoſophical Books; *Agrippa* has imitated them; *Cardan* and *Pomponatius* are come ſince; and our VANINI has taken a model from them in his Diſſertations and Dialogues. By the privilege of Hiſtory, I ſhould name here him, who with a greater Talent and more light than thoſe *Italians*, has built upon all the others; but as he is one of your Heroes, and the Opinions of Men are divided into the different Views they have aſſigned him; you would perhaps never forgive me, if I put his Name in the Liſt with *Cardan, Pomponatius*, &c.

IX. VANINI having finiſh'd his Studies, returned into his native Country, *viz.* to *Taroſano*, probably to regulate his Affairs, and to put himſelf in a ſituation of commencing his Miſſion. To that end, after he had done

Vanini undertakes an Apoſtleſhip

* See *Bayle's* Dict. Hiſt. Crit. Article *Agrippa Melanchton* in his Letter to Count *d'Erbach* calls him Sorcerer. Ep. lin. S. p, 11.

his Buſineſs, he returned to *Naples*, and 'twas there, as it is ſuppoſed, he formed the ſtrange Deſign of going with thirteen of his Companions to ſpread in the World his Atheiſm. Some pretend even, he own'd this at *Thouloufe* before the Parliament. *P. Marſenne* relates it in his *Commentary upon Geneſis*, where he refutes *Vanini*'s Impieties. "Before he was "executed at *Thouloufe*, he confeſſed before "the whole Aſſembly of the Parliament, that "at *Naples*, he and thirteen others, had re- "ſolved to go through the whole World, to "ſow the Doctrine of Atheiſm, and that "*France*, had fell to his Lot. An impious "Apoſtleſhip, adds *Marſenne*, which he exe- "cuted but too well at *Paris* and in other "Places. *

I quote this Circumſtance, becauſe it comes from a grave Author; but I do not think it probable for two Reaſons. Firſt, ſuppoſing the Fact to be true, that *Vanini*, to turn the Goſpel into ridicule, had affected an Apoſtleſhip of that Nature, I cannot think he would have own'd it in an abſolute Court of Juſtice, which could aggravate his Puniſhment; unleſs one ſuppoſes, it was but a few Minutes before Execution, when he ſaw there was no hopes left for him. But Father *Marſenne* adds, he made that Confeſſion publickly before all the Judges. Was all the Parliament in a Body to accompany him to the place of Execution? That is not likely at all. The other Reaſon is, that *Gramond*, who was upon the Place, and beſides, firſt Preſident of the Parliament, ſays nothing of it; nevertheleſs, the thing was re-

* *Marſenne*. Comment. in Geneſ. p. 671, 672.

markable

markable enough to be remembered, and of too great Importance to be forgot, upon account of that impious Man, and of whoſe Death he relates the moſt minute Circumſtances. If this negative Argument doth not perſuade all the Readers, we muſt own at leaſt that as VANINI gave a full Account of himſelf, before he died, *Gramond* was in the wrong to ſuppreſs this particular.

However it be, the Diſtribution of theſe new Apoſtles being ſettled, and *France* being appointed to our *Vanini*, he from that time quitted the name of *Lucilio*, and aſſumed that of *Julius Cæſar*. He thought perhaps, to make as conſiderable ſpiritual Conqueſts among the *Gauls*, as *Julius Cæſar* had made temporal ones. But he was diſappointed; for he did not return to *Naples* with his Friends in Triumph, nor did he die ſo nobly as the *Roman* Dictator.

His feint or true Voyages.

X. Here we ſhall follow him in all his Courſes, according to the Method traced by Mr. *Schramm*. You'll ſee the Marches and Countermarches of our turbulent Apoſtle. He croſſed firſt through a part of *Germany*, and advanced as far as *Bohemia*, where he had ſome diſcourſe with a *Mennonite*, and maintained obſtinately, that the Chriſtians diſputed among themſelves about Trifles, and that all thoſe who received the Creed of the Apoſtles with thoſe, of *Nice*, of *Conſtantinople* and St. *Athanaſius*, had no reaſon to excommunicate and condemn each other. Our *Italian* being ſatisfied to have railed at the Chriſtians about their Doctrine and Schiſms, makes an Anabaptiſt anſwer coolely according to his Cuſtom, *that the Roman Catholicks* * *differ as much from the Hereticks, as Truth from Falſhood.*

Vanini's Objection againſt Schiſms.

* Dial. p. 349.

Having

Having travelled all over *Germany*, he had a mind to ſee the *Low-Countries*, and he ſtopped at *Amſterdam*, where he had ſeveral Diſputes with an Atheiſt, whoſe Impieties he obſerves. But they are rather, as I think, his own Thoughts, which he only puts into the Mouth of another, to have the malicious Pleaſure of refuting them ill; as we ſhall ſee by what follows.

When he had ſeen all *Holland*, and the principal Cities of *Brabant*, which he accuſes of being full of Infidels, he came to *Geneva*, *where he had alſo*, ſays he, *a long Diſpute with a* Dutch *Atheiſt, whoſe Blaſphemies and Filth, he confuted with a great deal of Force and Courage, even to the hazard of his Life* *. As if there were any danger in a Proteſtant City, to launch out vigorouſly againſt Libertines, for one who is a Papiſt? That may do well enough in *Italy* or *Spain*, or among ſome of the Peaſants, to whom *Geneva* is repreſented as a ſafe Retreat of *Jews* and Atheiſts. But ſuch is the Character of *Vanini*: You muſt not rely too much upon what he ſays, for according to *Boileau*'s Epigram, † *his Words are frivolous, and his Diſcourſes no Articles of Faith.*

XI. Since we mention *Geneva*, you cannot imagine, Sir, how much the Southern Nations are prejudiced againſt that City. I remember, that being lodg'd in *Spain*, at a Prieſt's Houſe, in the Kingdom of *Valencia*, the Governour of the City, where I then was, being ſick, ſent to all the Houſes in the Town to get ſome Fowls for his Money. They refuſed him very rudely. He being piqued at this Refuſal, which

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* Dial. p. 328.

† *Boileau* Epigr. *contre un Athée.* Oeuvr. de *Boileau* Tom. 1.

was

was at an unſeaſonable Time, becauſe the City, which had ſurrender'd itſelf, had been rebellious to *Philip* V. he reveng'd himſelf with a great deal of Mildneſs: He commanded a Sergeant and two Soldiers, to go into all the Court-yards, and to take by force, and without paying, what had been refuſed him for a juſt Price. The Sergeant and Soldiers, began with the Prieſts, as being beſt ſtock'd, and came to our Houſe. My Landlord, a venerable old Man, but very brisk, conteſted ſome time, but ſubmitted at laſt, being overcome by his Nephew's and Houſe-keeper's Intreaties; but not without a great deal of Paſſion. In ſhort, he could not contain himſelf any longer, when he ſaw that the Soldiers, ſhewing him his Fowls, laugh'd in his Face. *Is that*, ſays he, *the Law of God? It is the Devil's Law! In* Geneva *itſelf there is nothing done like it.* Eſſo es Ley de Dios? Es Ley de todos los Diablos! In *Genievra* no ſe haze tal Coſa!

XII. *Vanini* finding himſelf no longer ſecure at *Geneva*, becauſe he perhaps acted there the Libertine, went to *Lyons*, and took upon him alſo to hold forth there under Pretext of teaching Philoſophy. But they diſcovered the Venom, and he was obliged to flee, to eſcape being burnt. The Plan of his Apoſtleſhip was thus often interrupted. He came to *England*, and made Acquaintance at *London*, with one *Moravi*, Chaplain to the Envoy of *Venice*, and by his Aſſiduity to the Catholick Faith, *he drew upon him*, ſays he, *the Perſecution of the* Proteſtants. *He was put in Priſon, where he remained forty nine Days, well prepared to receive the Crown of Martyrdom, which he wiſhed for*, ſays he, *with all the Ardour imaginable.* This happened in 1614,

Vanini's Impriſonment, and his Deſire for Martyrdom.

1614, and is the ſecond *Date* we have found in his Life. †

He is ſuſpected in *Italy*, and goes to *France* again.

XIII. But ſuch a Martyrdom did not agree with an Atheiſt. They let him out of Priſon, he croſs'd the Sea, and took the Road for *Italy* again. Another Diſappointment in his Views. *Genoa* ſeem'd very proper for him to raiſe himſelf Diſciples. He therefore undertook to teach Youth, receiving Scholars of all Degrees: Unhappily for him they had no great regard there for *Averroes*. They look'd upon him as an *Arabian* Philoſopher, * a profeſs'd Enemy of the *Immortality* of the Soul; he wrote againſt the *Chriſtian* Religion, which he look'd upon as falſe, by reaſon of the pretended Myſtery of the Euchariſt; the *Jewiſh* he called childiſh, for the many Rites and Ceremonies; And laſtly, the *Mahometan*, he ſtiles a hoggiſh Religion, becauſe of the carnal Enjoyment which it permits and authorizes. Our *Vanini* nevertheleſs, was a perfect *Averroiſt*, as we have obſerv'd already. He commenced his firſt Lectures with the Principles of that Philoſopher; an unhappy Obſtinacy, which accompany'd him every where, and always drew upon him the ſame Suſpicion and Danger! Some complained of it, he was afraid, and returned to *Lyons*, where he endeavoured to ſkreen himſelf from the Perſecution of the Clergy, by a Book againſt *Cardan*, and other *Atheiſts*, wherein, under pretence of combating them with all his Might, he gives 'em, in ſome meaſure, the Victory, by the weakneſs of his Anſwers. We

† Amphit. p. 118. *Such is the Hypocriſy which reigns from one End to the other of his Amphitheatre.*

* See *Bayle's* and *Moreri's* Dictionaries. Article *Averroes*.

ſhall

ſhall ſpeak preſently of his *Amphitheatre*, when we have conducted our Atheiſt to the End of his Courſe.

XIV. But not truſting too much to his Books, in which the Venom is wrap'd up ſo careleſsly, that it could not eſcape the Obſervation of Men of Underſtanding, he went to *Italy* again, where having been accuſed of reaſſuming his former Impieties, he return'd into *France*, and took Orders upon him in *Guienne*, but it is not known in what Convent. The *Patiniana* tells us this Particularity †. F. *Merſenne*, who confirms it, adds another, which, if it is true, is a great Reproach to the Life of our Atheiſt, *viz.* That he was turn'd out of the Convent for his diſorderly Behaviour; and among the reſt, for a Crime deſerving of Fire and Faggot, which good Manners forbid to name, and the *Minime* dares not to expreſs himſelf but in *Greek*. I ſhall endeavour to tranſlate the whole Paſſage. " In " that manner, ſays the Fryer, ſpeaking againſt " Infidels, 'tis one hears Atheiſts talk: *We are* " *honeſt Men, we do nothing againſt our Conſci-* " *ence; we would rather die than forſwear our* " *ſelves, or wrong any body.* But with their leave, " they don't ſay true. There is not a worſe " Man than an Atheiſt: And I prove it even by " the Example of *Vanini*, the *Cæſar* of the In- " fidels, who having taken upon him the *Ha-* " *bit*, and not being willing to diſhonour him- " ſelf by the Love of Women, thought to put " himſelf out of the reach of Infamy, by giv- " ing into the Exceſs which is attributed to his " Country; which being known in the Convent " where he was, they turn'd him out as a vile " Monſter *.

He is made a Frier, and turn'd out of the Convent for ſome heinous Crime.

† *Patiniana*. p. 119.
* *Merſen.* Comment. *in Geneſ.* p. 671.

XV. Being baniſh'd from the Convent he retired to *Paris:* And as he always perſiſted in his Views, he neglected no Opportunity to inſinuate his Parodoxes. He endeavoured to introduce himſelf to the Pope's Nuncio, which was at that time *Roberto Ubaldini*, Biſhop of *Politio*. To make his Court to him, and all the Clergy in general, he undertook to write *An Apology of the Council of* Trent: The Nuncio gave him the Liberty of his Library, and free Power to conſult what Books he thought proper. This Circumſtance he tells us himſelf in his Works, that you may not be ſhock'd to ſee ſo many antient and modern Atheiſts alledged and refuted there; a Liberty which, every one knows, is not allowed to Prieſts. *Patin* tells us, that he affected to be Learned, but was not: But he ſpeaks only from Tradition. F. *Merſenne*, who was better informed about it, tells us, in the Place of his Commentary, quoted above *, that he did not acquit himſelf ill of the Functions of his impious *Apoſtleſhip*. He perverted a great many young People, he gained ſome Phyſicians, and had acceſs to the *Marſhall de Baſſompierre*, who was not otherwiſe overburthen'd with Religion. I don't doubt but he was, at that time, known to F. *Garaſſe*, a Jeſuit, who ſtiles him the *Grand Patriarch of Atheiſts*, and relates ſome of his Converſations in his *Doctrine curieuſe*. You may judge, Sir, of our *Vanini*'s Converſations, and of his Policy, by the Sample *Garaſſe* gives us of it, and which I ſhall relate in his own Words, becauſe I know you love the old Stile, and that you find in it ſome Graces, and a *keeneſs* which is wanting in

* See above. p. 9.

ours

ours. "As to Men (*Vanini* ſpeaks) they ſhould do, "as the Rangers, or Keepers do yearly in "great Foreſts; they go to examine, and to "find out the withered Trees, and to clear "the Foreſt, cut down what is uſeleſs, and "ſuperfluous or hurtful; keeping only the good "Trees, and the young Branches of Hope. "In like manner, ſaid that wicked Atheiſt, "every Year ſhould be held a rigorous Viſita-"tion, of all the Inhabitants, in the great and "populous Cities; and every thing uſeleſs, "and what hinders the reſt from living ſhould "be put to Death. As for Example, thoſe "that follow no Buſineſs beneficial to the Pub-"lick, decrepid old Perſons, all Vagabonds "and idle People: Nature ſhould be lopp'd, "the Cities clear'd, and every Year at leaſt a "Million ſhould be killed; who are like wild "Brambles, or Nettles, and hinder others "from growing". * Thoſe are the Fruits of *Cardan*'s and *Averroes*'s School.

He print his Dialogues.

XVI. He had his *Dialogue about Nature* printed in 1616, which he dedicated to the *Marſhall de Baſſompierre*, whoſe Almoner he was, ſays M. *Patin*, with a Salary of 200 Crowns a Year; † but probably he had this Place not till after this Dedication. For all that he was not contented with this Place, which obliged him to be regular; he loved better to ramble about, and to make Converts; and in this manner he loſt himſelf.

The Bo made hi ſuſpicio to the Clergy.

XVII. His Books were every Day more known, and more ſuſpected. His *Amphitheatre* had begun to draw in ſome Minds, by the

* *Doctrine curieuſe.* p. 815.

† In the Collection of M. *Patin*'s MSS. quoted in *Apologia pro* Julio Cæſare Vanini. The Apologiſt ridicules the *MS.*

new Ideas and Paradoxes, which he ſubſtituted to the antient Tenets of common and ſcholaſtick Divinity. But his Dialogues, much more impious, had defamed him to ſuch a degree among the *Roman* Clergy, (a Body of Men, naturally very jealous and miſtruſtful; and ſtill much more ſo in proportion to their Ignorance, * and the Character of the Errors whoſe Contagion they dread) ſo that they waited but for a plauſible Opportunity to accuſe and cut him off. They cou'd not condemn him upon his Books; for they were printed with Authority, approved by ſome *Doctors*, and he himſelf ſubmitted all his Writings to the Authority of the Holy See †; an excellent way to get clear of Embroils, by means of Recantation! However it be, the Venom was perceivable. Religion was there with Neck and Heels tied together, delivered up to the Hands of the Profane and Atheiſts. The *Sorbonne*, of which two Doctors had approved his ſtrange *Dialogues*, recalled that Book to a new Examination, and condemn'd it to be burnt by the Common Hangman. *Roſet* I think is the only one who tells us this Circumſtance, ** but it is too probable to be omitted. We are told of another in the *Patiniana* *†, which is, that *Vanini* ſeeing himſelf forſaken by all the World,

The *Sorbonne* condemns his Books to be burnt.

* This Word is only applied to the Times when Ignorance reigned.

† This he doth in the *Amphitheatre*, at the End of the firſt Diſſertation, and in the laſt of his Dialogues. *p.* 495.

** In his tragical Hiſtory, where he adds alſo this; he cauſed to revive the wicked and abominable Book, called *The Three Impoſtors*, which is printed publickly, and to the great Scandal of the Chriſtians. He compoſed a Book about natural Cauſes, and dedicated it to M. *Baſſompierre*. He aſcribed to Nature, what belong'd properly to the Creator of the Univerſe. The *Sorbonne* condemn'd this Book to the Flames.

*† P. 52.

hated

hated by the People, ſhunned by honeſt Men, perſecuted by the Clergy, and what touched him neareſt of all, under a continual Poverty; he launch'd out into the firſt Action of Deſpair, which cou'd not but prove fatal to him. He wrote to the Pope, that *if they did not ſoon give him ſome Benefice, he was going to turn the whole Chriſtian Religion topſy-turvy, in three months time. Patin*, who is made to ſay this, adds, that *he knew a Man of Honour, who had ſeen that Letter, in which were many other Abſurdities, and even very ſhocking Things.* I am apt to believe, that *Vanini* had couched this Letter upon Paper, to diſperſe his Spleen, and to divert himſelf about it with his Friends, but there is no likelihood of his having ſent it to *Rome*. Princes have long Arms, and the Popes yet longer than other Princes. *Vanini* was not yet ſo diſordered in his Mind, as to inſult in ſo daring a manner, the Lieutenant of *God* upon Earth; he had too much reſpect and veneration for the Church. *I would rather*, ſays he, ſomewhere *, *draw upon me the anger of* Horace, *than that of our Inquiſitors, whom I reſpect and venerate as the Guardians of the Lord's Vineyard.*

XVIII. This is certain, that he left *Paris* in 1617, and returned to *Toulouſe*. He did there what he had done every where elſe, without change of Method or Principles. He profeſſed there *Phyſick*, *Philoſophy* and *Divinity*, and took Scholars of all Sorts. *Gramond* ſays, he kept in cloſe Quarters for ſome time. He had Art enough to introduce himſelf to the firſt Preſident, who charged him to inſtruct his Children: In which he ſucceeded too well to his Misfortune; for if we may be-

He left *Paris* and came back to *Toulouſe*

* Amphit. p. 109.

lieve

lieve thoſe who told it to *M. Leibnitz* *, the Attorney General animated the People againſt this miſerable Wretch, and proſecuted him with the utmoſt Rigour, on purpoſe to vex the Preſident, who began to love him.

The Cauſe of his death according to *Leibnitz*.

XIX. There was a great deal of Imprudence in *Vanini*'s Conduct. At the time when he is lifted up from the Dirt and the Oppreſſion of the Clergy, and that he ſees himſelf upon the brink of Preferment, he endeavours ſecretly to teach and inſinuate Atheiſm. He inſtructed the Children in the fear of *God*, and thoſe who were Men grown, in Irreligion. Thoſe are commonly the Marches and Countermarches of wicked Spirits, and one of thoſe Contradictions, which it would be difficult to comprehend, and even believe, if we did not know, that there are ſtill extant ſuch profeſs'd Infidels, who after they have inſtructed their Children in the principles of Chriſtianity, to bring them up to Virtue and Modeſty, go afterwards with their Friends to the Tavern, and ridicule the ſame religious Precepts, which they have taught their Family.

XX. *Grammond*, who was ſince firſt Preſident at *Toulouſe*, reports in his Hiſtory, that our Infidel did not ceaſe venting his Doctrine, and to ſpread abroad his Impieties. But he did yet more, ſays *Borrichius* in the Journal of his Travels †. He was told at *Toloufe* that *Vanini* had been burnt, becauſe he had eſtabliſhed there, ſome ſmall Aſſemblies, about ten of the Clock in the Evening, frequented by ſome of the Chiefs of the City, to whom he

Gramond and *Borrichius*'s Teſtimony.

* Eſſays of *Theadicèe*, towards the End. See the Index at the Word *Vanini*.

† Apolog. pro *Vanino*, p. 39.

delivered

delivered his libertine Principles. 'Tis likely *Borrichius* means young Men, for it is not to be ſuppoſed that Fathers of Families went there. They would not have ſuffered, in their City, ſuch a dangerous Perſon, although they had been of his Opinion themſelves. Mr. *Bayle*, who was ſo curious, and had lived at *Toulouſe* eighteen Months, tells us nothing of theſe Circumſtances of *Vanini*'s Life, it ſeems rather he did not know them, or doubted of thoſe he found in *Borrichius*'s Writings. Perhaps we may learn ſomething about it in his Supplement, which is now in Hand; for I have been aſſured there is an Article about VANINI in it. If the Gentlemen of *Toulouſe*, who in the Records of their Parliament, poſſeſs all the Memoirs of this Proceſs, unleſs they burnt 'em with the Criminal, would favour the Publick with 'em, they might do it very eaſily, by ſending a Copy thereof to ſome noted Man, whom the love for Sciences and Literature, renders every Day dearer to the learned, I mean, the Abbé *Bignon*, who would not fail to impart it to the Publick, in that valuable Journal, which is formed under his Direction: By that means we might be aſſured of Facts, which we cannot now be poſitive in. I know very well that we have *Grumond*, who was upon the Place, and that he is particular as to the chief Circumſtances; but there is a great deal of difference between the report of an Hiſtorian, who is very bigotted *, and the authentick Pieces of a Court of Judicature. Mean while, until thoſe Gentlemen ſatisfy us, or ſome other curious Perſon of *Toulouſe*, doth acquaint us with ſome more conſiderable Particularities, (as it is eaſy yet

* See *Patin*'s Letters. Letter 91.

to come to the knowledge of them) you muſt content yourſelf, Sir, with thoſe I have collected. But before we come to the Death of our Infidel, I ſhall give you an Account of the Impieties which ſo viſibly brought it upon him: And that I can do no better than by an Abſtract of his Works, ſince it is always true, that Authors draw their Pourtraits in their Books, without thinking on it.

Vanini's Works.

XXI. There is room to believe that all his Works have not been publiſhed. He tells us himſelf, that his firſt Eſſays did not pleaſe him afterwards. They are Commentaries upon Natural Philoſophy †, where he refuted *Cardan* in many Places. You may judge of their Merit, from this Paradox which he taught there, *viz.* that *the Taſte is not one of the five Senſes.*

Commenta ii. hyci.

He compoſed afterwards Commentaries upon Phyſick, *Commentarii Medici*, which he eſteemed but little, as being made in haſte. He treated there of the Diſtempers of the *Eyes* and their *Remedies* * &c.

Commentarii Medici.

Afterwards he worked upon *Morality*, and wrote a Treatiſe about true Wiſdom, *De vera Sapientia* §. *Garaſſe* had read that Book *, as it appears from his *Doctrine Curieuſe*. The choice

† See *Schramm* De Vita & Scriptis *Vanini*, p. 80.

* See the ſame. Ibid. and *Vanini's* Dialog. p. 88. and 166.

§ See the ſame. Ibid. and *Vanini's* Dialog. p. 275.

* I quote this Fact upon the good faith of *Vanini's* Apologiſt. *Apologia pro Vanino*, p. 6. I have conſulted *Garaſſe* ſince, who ſays, he has read that Book, p. 1015. *Doctrine Curieuſe*. I have ſeen, ſays he, but three of *Vanini's* Books, viz. his *Amphitheatrum*, that *De ſapientia*, and his *Dialogues*. In his *Amphitheatre* he ſpeaks like an Hypocrite; in his Book *de Sapientia* like a Cynick, and in his *Dialogues* like a compleat Atheiſt.

of

of ſuch a Subject may ſeem perhaps ſtrange in *Vanini*'s Hands; but it is not uncommon for the greateſt Fools to write about true Wiſdom. *Garaſſe* ſays, that Book is writ, as if it were done by a *Heathen* or *Cynick Philoſopher*.

Natural Magick was not out of the reach of his Enquiries. He compoſed a *Treatiſe*, entituled; *Phyſico-magicus tractatus* *, where among other Paradoxes, he maintained that Baſtards have more Senſe, more Beauty, and more Strength than legitimate Children. He was ſo poſſeſſed of that Prejudice, that he repeats it in his *Dialogues*, and makes no ſcruple to wiſh himſelf a Baſtard, whoſe turpitude is ſo amply recompenced by the Advantages of the ordinary Effects. "Why do you ſmile? ſays *Alexander*, becauſe I thought ſays *Julius*, on a "pleaſant Speculation I had juſt now. Pray, "anſwers *Alexander*, impart it to me, if it was "but for to laugh. *Julius Caſar* anſwers †, "Would to *God*, I had been born from the "left ſide, and out of Wedlock! My Parents "would have worked to frame me with ſo "much Vigour —— that I ſhould have had "an extraordinary Beauty, a robuſt Body and "a clear Head: But becauſe I am a legitimate Child, I want all thoſe Advantages. "My Father was bent under the burden of "Years when he married, and all his Vigour "of Youth was cooled. His Strength was "ſlackned, his Spirits very weak, and his natural Faculties very much impaired; he was "ſeventy Years old, that is all you can ſay, "and conſequently —— from thence it is I "have obtained a feeble Complexion. And

* Dial p. 252.

† Dial. p. 321. 322.

" if you ſee me of an aſpiring Genius, a " gentle Deportment, and a Body ſubject to " Infirmities, 'tis becauſe my Father, although " old, was agreeable, of an eaſy Temper, and " that a young Woman (Philoſophers laugh at " thoſe Chriſtian Marriages) took care to " warm him again. Moreover, he waited for " that fine Seaſon, when Nature is renewed, " and by the help of *Bacchus* he found himſelf " yet —— *Alexander*. By all that is good, " thoſe are not the Speculations of a drunken " Man! Thoſe are Meditations of a Man " profoundly Wiſe.

Begging Pardon of the Publick for the Liberty I have taken in tranſlating this Paſſage, as modeſtly as poſſible, I proteſt my only View in ſo doing was, to make Vanini's *Character the better known.*

This ambitious Man ventured alſo upon a Treatiſe, that Glory ought to be held in Contempt, *De contemnenda Gloria*, where he propoſed to refute all the Atheiſts of his Time, who accuſed our *Saviour* of having aimed at Glory, even to his Death: As if there were great need to overthrow this Illuſion for thoſe who read the Goſpel, and know that *Jeſus Chriſt* always appealed to his Reſurrection, which if it had not happened, would not have failed ſtaining his Name with perpetual Contempt.

But this Atheiſtical Objection pleaſed *Vanini* enough to repeat it often, and to form his own from it, as we ſhall ſee in the following.

Apologia prolege Moſaica & Chriſtiana.

It is probably that with the ſame impious View he compoſed an Apology for Religion; which he entituled, *Defence of the Law of* Moſes *and that of* Chriſt *againſt the Phyſicians, Aſtronomers*

nomers and Politicians *. He there refuted the Atheiſts of his Times, who advanced that *Moſes* made the Children of *Iſrael* paſs through the red Sea at the time of reflux or low Water: He alſo treated there at large upon the Tenets of the Chriſtian Religion, and in particular on the Immortality of the Soul, which *Cardan* and *Pomponatius* had attack'd, and he made it appear after his manner, that the Opinion of the latter is of dangerous Conſequence. All this without doubt to have an Opportunity of ſaying againſt the Chriſtian Religion, what he pleaſed. 'Tis certain he had a good Opinion of Aſtrology, and that conſequently he was ſomething of an Aſtronomer. He took upon him to publiſh *A Treatiſe of Aſtronomy*, which was printed in *Germany*. *Alexander* his admirer acquaints us with that particularity in his Dialogues. I have read, ſays he †, *theſe* Eaſter *Holy-Days, your Books of Aſtronomy, printed at* Strasbourg, *with a very fine Letter: You teach there ſome things concerning the Stars, whioh ſeem to me admirable and divine.* This Book muſt be very ſcarce, ſince M. *de La Croze*, whom every body knows to be well verſed in the Hiſtory of Literature, without mentioning here his other Accompliſhments, for all the Enquiry he made could not light on it: He not only did not find the Book, but alſo owns, that he no where has ſeen mention made of it *.

Libri Aſtronomici.

To appeaſe the Clergy, *Vanini* compoſed alſo *An Apology for the Council of* Trent, divided into eighteen Books, and directed againſt the Proteſtants †. Mr. *Schramm* thinks he was not

Apologia pro Concilio Tridentino.

* Amphitheatr. p. 38.
† Dial. p. 31.
* *Entretien ſur div. ſuj. d'Hiſt.* &c. p. 353.
† See the Preface of the Amphitheatre.

ſparing there of Invectives againſt *Luther*, and I believe *Calvin* met with no better Treatment. It is a common Stratagem with Infidels, to skreen themſelves from the ſecular Power under the maſk of Orthodoxy, and to lay hold of the Body of the Tree, at the time when they dig the Ground to root it out. No Perſons in theſe latter Times have ſeem'd to be more intereſted for the Doctrine of *Grace*, than thoſe who derided it moſt in their Hearts. This Stratagem, notwithſtanding it is very groſs, did not fail of Succeſs. They are applauded in Converſation and all Conferences, and through a ſecret Jealouſy, others, who counterbalance their Merit, are denied the juſt Encomiums of their Ability and Zeal. What is practiſed in our Days did alſo happen in *Vanini*'s Time. Clear-ſighted Perſons, diſcovered immediately in his Books, the Venom which ſeized the Reader at the firſt Approach, and complained of it. But *Vanini* defended himſelf, and proteſted he was zealouſly affected to the *Roman* Religion, he wrote of true Wiſdom, of Contempt of Glory; of the Truth and the light of the Council of *Trent*, he ranged himſelf under the formidable Canons of that Council, as ſome have skreened themſelves ſince behind other Canons; he frowned at Innovators, and maintained the Intereſt of the Church with a dazling Zeal. Thus he eſcaped the Cenſure, becauſe he aſſumed an Air of Orthodoxy, which ſatisfied ſome weak Minds. He found ſome Doctors of the *Sorbonne*, who approved his Works which were viſibly impious.

All theſe Works of *Vanini*, whether they were publiſhed or not, are loſt; we know the Titles and Subject of them, becauſe he acquaints us with it himſelf in the two Books which are not periſh'd,

riſh'd, *viz.* his *Amphitheatre* and *Dialogues*, of which I am going to give you an Account with all the Fidelity you require of me.

His *Amphitheatre* and *Dialogues.*

XXII. The *Amphitheatre*'s Title is, *Amphitheatrum æternæ providentiæ Divino-Magicum, Chriſtiano-Phyſicum, Aſtrologico-Catholicum, adverſus veteres Philoſophos, Atheos, Epicureos, Peripateticos, Stoicos*, &c. That is, *An Amphitheatre of Divine Providence, Divino-Magicum, Chriſtiano-Phyſicum, Aſtrologico-Catholicum, againſt the antient Philoſophers, Atheiſts, Epicureans, Peripateticks, Stoicks*, &c. in 8*vo.* printed at *Lyons*, 1615, dedicated to *Count de Caſtro*, Protector of his Family and his Benefactor. It is approved by four Doctors, *viz.* by *Claude Deville*, *François de Soleil*, *jaques Deveins & Seve*, who acknowledge to have found there nothing againſt the Catholick and *Roman* Faith: But on the contrary they affirm, it contains very profound and ſtrong Reaſons, agreeable to the moſt ſublime Doctrine of Maſters in Divinity, * and they admire the Advantage it will procure to the juſt Cauſe.

A general Idea of his *Amphitheatre.*

Some Criticks have judg'd that Book pretty innocent. The famous *Morhoff* † finds there ſome good Proofs for the Immortality of the Soul, and he does not believe that *Vanini* publiſh'd it with an Intention to attack the *Chriſtian* Religion. *Barleus* alſo ſpeaks well of it, and *Dieckman* doth not like ſome ſhould find ſo much fault with this Book, as if he ſhew'd himſelf a complete Naturaliſt in every Page. Nevertheleſs F. *Merſenne*, M. *de la Croſe*, and a Number of others, are of the contrary Opinion. They diſcover there a Stock of Hypocriſy and Malice, which laſts from the Beginning to the

The Opinion of ſome learned Men upon his *Amphitheatre.*

* This is the Subſtance of the Approbation.

† Morhoff *in Polyhiſtor. Idem in* MSS. *de Hiſt. Liter. Vid. Apol. pro Vanin.* p. 33.

End.

End. My Vote, I muſt own, is of no great Moment, but I aſſure you ingenuouſly I ſide with the Opinion of the laſt. I find the *Amphitheatre* a very dangerous Book, and rather more prejudicial than the *Dialogues*. I agree, the Venom is more hid there than in the laſt: But it is alſo more methodical and enſnaring. He ſeems to combat the antient and modern Atheiſts, and in effect he gives them the Victory, by his weak and inſignificant Anſwers. But when I ſay dangerous, I don't mean they are ſo to a Philoſopher but indifferently armed. No Sir, you'll find nothing uncommon in *Vanini*. Some Ideas of *Ariſtotle*, and *Averroes*, upon Naturaliſm; ſome Extravagancies of *Cardan* and *Pomponatius*'s Horoſcopes of the now reigning Religions: And laſtly, ſome Difficulties of *Cicero* * againſt *Providence*, agitated before him in *Greece*, by *Epicure*, *Straton*, and *Carneades*, lightly touch'd over again by *Seneca*: † Which are laſtly, produced with all their force, by the ingenious Author which every one knows. This is all you'll find in *Vanini*, on the Subject of the Exiſtence of *God*, of the Author of Motion, of his Providence, of his Attributes, of the Origin of Phyſical Evil, of the Immortality of the Soul, *&c.* He immediately propoſes the State of the Queſtion plain enough, afterwards he relates the beſt Reaſoning of the Scholaſticks, pretty much at large; then ridicules 'em, and ſubſtitutes in their Place, either the greateſt Nonſenſe in the World, or the moſt impious Naturaliſm.

His Preface is arrogant.

He explains his Deſign in the Preface, in a manner not becoming a modeſt Philoſopher. "I propoſe, ſays he, in this Work, to unfold,

* See *Lib.* 1. 11. De *Natura Deorum*.
† See the Book *de* Providentia.

" and

" and to make plain all the Myſteries of Provi-
" dence; but don't expect I ſhould take 'em
" from the Declamations uſed by *Cicero*, nor
" from thoſe Dreams, or rather plauſible Ra-
" vings of the Divine Philoſopher; and yet
" much leſs from the abſurd Impertinencies of
" our Scholaſticks: But I ſhall draw them from
" the Source of the moſt hidden Philoſophy,
" as being beſt able to quench the thirſt of cu-
" rious Minds *". You ſee, he ſpeaks of *Cicero* with great Diſdain, and yet he has ſtole from him through the whole Work; as I hope to make it appear in the Tranſlation I have promiſed you, of the Book of *The Nature of the Gods*; which will be publiſh'd, God willing, next Year, if the Publick doth not diſcourage me.

He attacks the ſtrongeſt Arguments, of the Neceſſity of the Exiſtence of a firſt Motion.

XXIII. The firſt Diſſertations of the *Amphitheatre* ſeem, at firſt ſight, very innocent: But don't truſt him, for he ſoon overthrows again what he has eſtabliſh'd, or at leaſt he burthens it with Difficulties, and flings himſelf, at all hazard, into *Averroes*'s Metaphyſicks, where I muſt own ingenuouſly I cannot follow him. The neceſſary Exiſtence of a firſt intelligent Cauſe of Motion, who has at leaſt ranged things in the Order we ſee, is one of our chief Arguments againſt Atheiſts. As for him, he prevaricates upon this Proof, and omits no turn to diſimbarraſs himſelf from it; but here 'tis where he entangles himſelf moſt, and grows perfectly unintelligible: *Spinoſa* is not more obſcure in his *Ethicks*. You know, Sir, this is the Caſe of all Infidels: Nothing is more impenetrable than their Principles, and Providence has wiſely ordered it, that what is deſigned by the wicked to root out of the Hearts of Men,

* Preface to the *Amphit.*

the

the Belief of a Divinity, is always very obſcure, and conſequently improper to do the Effect. *Vanini*, after having done all his Endeavours to weaken the Proofs of a firſt Cauſe of Motion, ſubſtitutes another, as ridiculous as poſſible to imagine. He reaſons upon the Number 9, and draws from it a pretended Demonſtration, which he calls *Divino-magica*, or *Cabaliſtica*, and boaſts of having proved thereby the Exiſtence of God more ſtrongly, than by the Proof we produced; which is as antient as the World itſelf. But once more that is his way; he mocks the Chriſtians by propoſing their Reaſons in an unfair manner; he embroils them by *Ariſtotelian Subtleties*, and after he has rejected 'em, he ſubſtitutes new ones that are pitiful.

He gives an ambiguous Definition of the Divinity.

XXIV. He ſucceeds beſt when he throws his Doubts on the firſt Truths, which are the Foundation of all others; ſuch are for Example, the Exiſtence of *God* and his Providence. As the Nature of theſe two Objects infinitely exceeds our Capacity, he imagines to have refuted them, when he has ſhewn the infinite Diſproportion there is betwixt the lowneſs of our Conception, and the heigth of thoſe Objects. As for Inſtance, he thought to refute the Divinity, by giving the following Definition of it.

" You ask me, ſays he, * what is God; but " if I knew it, I ſhould be God; for no one " knows what God is, but God himſelf. We " may nevertheleſs know him in ſome meaſure " by his Works, almoſt in the ſame manner as " we know the Light of the Sun thro' a Cloud, " which eclipſes it. Behold now how our Hand

* *Amphit.* p. 10.

makes

" makes bold to deſcribe that firſt of all Be-
" ings, altho' perhaps very vainly. *God* is to
" himſelf his Beginning and his End; tho' he
" has neither Beginning nor End. He has no
" need neither of one or the other, and yet he
" is the Author of both. He ſubſiſts continu-
" ally without any Time: Equally not ſuſcep-
" tible of what is paſt or to come. He reigns
" every where, without any Place; unmove-
" able, without any Situation; ſwift, without
" Motion; all, without all things; within eve-
" ry thing, without being encloſed; without
" every thing, without being excluded. In
" every thing, he governs all; without every
" thing, he has created. He is good without
" Quality; great without Quantity; univerſal
" without Parts; unchangeable tho' he changes
" all: His Will is his Power, and the exerting
" his Power doth not differ from his Will:
" Simple, in him nothing is in Power, but eve-
" ry thing in the Act, he is in himſelf pure;
" the firſt, the middlemoſt, and laſt Act. In
" ſhort, he is all, above all, beyond all, before
" all, and after all, and he yet remains all."

XXV. Perhaps you'll ſay Sir, I am very bold to tranſlate this Paſſage after the famous Mr. *Saurin*, who has explained it in one * of his Sermons in a conciſe manner indeed, but much more elegant, than it is in *Vanini* himſelf; but I beg you'd remember this is a Letter, where we undertake to diſcover with Exactneſs the Venom of our *Atheiſt*; and not a Sermon where commonly one is ſatisfy'd with pointing at it, which yet ſhou'd be done with abundance of Circumſpection. As for the reſt, you are

* The Title of the Sermon is *ſur les profondeurs divines* the 4th, *Tom.* 1. See *Saurin's* Anſwer to *Vanini's* Definition. *Ibid*

too good a Philoſopher to be embarraſs'd with our Atheiſt's Definition. 'Tis not dangerous but to thoſe who have a corporeal Idea of God: But if we ſuppoſe, 1. That God is *a pure Spirit*, and conſequently without the Sphere of our Imagination. 2. That he is an *infinite Spirit*, and conſequently beyond our Ideas: If one ſuppoſes, I ſay, theſe two Truths, which are ſelf-evident, all the Clouds of *Vanini* are diſperſed; all the Jingle of Words diſappears: And if any Difficulties remain, they are common to all Syſtems and Sciences. You may judge of it, Sir, from the ſhort Recapitulation I ſhall make of that long Definition.

If I knew what is God, I ſhou'd be God. Not at all, becauſe it would be very eaſy for God to make himſelf known to an intelligent Being, of the firſt Order.

God is to himſelf his Beginning and End. That is a heap of Words which ſignifies nothing.

He is ſuſceptible neither of the paſt nor future. Without doubt. Is there any Paſt or Futurity in a pure, infinite, and eternal Spirit? No, Let us own to *Vanini* that Eternity is incomprehenſible; but he knows very well that it may be demonſtrated, as two and two make four. As to the manner of this Eternity, whether it is a *fix'd* Point, or a continual Succeſſion, we leave that to the Philoſophers.

He reigns every where, without any Place; that is to ſay, he is infinite, without being corporeal: Agreed. One might make the ſame Difficulty about the *Ubi* of our Souls, and anſwer to the ſame purpoſe; the Proportion being obſerved.

He is good without Quality. God's Goodneſs is ſpiritual and moral: Our Infidel forgets himſelf, with his Quality.

Great

Great without Quantity, univerſal without Parts. All this turns upon corporeal Ideas, which muſt be excluded.

Unchangeable when he changes all. This is no Contradiction; for in changing all, God executes his Deſign, and remains unchangeable.

Whoſe Will is Power, and whoſe Will is confuſed with the Power. Obſerve, this is very bold for a Philoſopher: Is it not to penetrate into the moſt obſcure part of Divine Nature? As for me, who am not ſo clear-ſighted as our Free-Thinkers, I content my ſelf to ſay, that altho' the Will of God is always efficacious, one may however diſtinguiſh this Will into *conceived* and *executed:* For how cou'd one explain otherways the Predictions of the Prophets, who adviſe us of the particular Wills of God, many Ages before their Accompliſhment?

In whom nothing is in Power, but every thing in the Act. Another Falſhood, in my Opinion, which wou'd deprive God of his Sovereign Liberty, and introduce Naturaliſm.

Laſtly, *He is all above, beyond, and within every thing.* All that borders upon the corporeal Ideas which we have refuted already.

XXVI. This is not the only Place, where *Vanini* mocks Religion, and the Attributes of God. In another Place he pretends to defend the Scripture, and accuſes the Pſalmiſt of having ſaid, that *the Mercy of the Lord is above all his works.* You may eaſily comprehend what that means, in the Mouth of a good Man, who is poſſeſs'd of the Love of God, and who, in conſideration of his Unworthineſs, and the Benefaction of the Creator, extols that of his Attributes, which affects and intereſts him moſt. *Vanini* takes it all in a metaphyſical Senſe, and complains of the Preachers, who, founded upon

An inſignificant Criticiſm upon the Pſalmiſt.

theſe Words, ſays he, utter Blaſphemies, * telling us, that God is infinitely more merciful than juſt. As if God was not a ſimple and pure Being, but a Compoſition of Beginning and End, ſubſequent to what he is compoſed of. Behold, Sir, I beſeech you, his manner of Philoſophiſing. Men ſpeak of the moral Attributes of the Divinity, if 'tis permitted to uſe the Expreſſion, of his Juſtice, and his Mercy; things where the Queſtion is not about Compoſition. Nevertheleſs, our Caviller ſeems to be ſo much in Pain about it, that he talks of it, as of different Principles, which, by being more or leſs exerciſed in the Divine Eſſence, cou'd alter the ſimplicity thereof. Where is the Conſequence? 'Tis true, it would be imprudent to maintain, abſolutely in a Sermon, that God is more merciful than juſt: But for all that, we ſhould not call it Blaſphemy, and bring Heaven and Earth together, as if all was loſt; ſince the Perſon who unadvertedly ſpeaks thoſe Words, takes them in the Senſe of the Prophet, *viz.* that as we are Sinners, nothing touches us more than Divine Compaſſion. But *Vanini* has his Views; he endeavours to put the Scripture againſt itſelf, and embroil the Chriſtians, and afterwards to ridicule the Myſtery of Redemption.

Cardan's Horoſcope of the Chriſtian Religion.

XXVII. After he has thrown ſome Clouds over the Exiſtence and Perfections of God, he attacks the Chriſtian Religion indirectly, but in a pleaſant manner. You'd never imagine it, Sir; he ſteals from *Cardan*, *Jeſus Chriſt*'s Horoſcope. Some Men indeed, have doubted *Cardan* did not believe the Truths of our Religion: *Vanini* maintains that he was not very ſuperſtitious,

* *Amphit. Diſſert.* XIX. towards the End.

and

and yet proves the contrary, by quoting that famous Horoſcope, which he calls impious. We will call him, if you pleaſe, *the ſuperſtitious Atheiſt*, and you'll ſee if the Definition becomes him, by examining one of his famous Aſtrological Whimſies: But under Condition that you'll pardon me, Sir, if I bewilder my ſelf in the *Cæleſtial Geography*; for I have never wander'd about in that Place.

Now he pretends that there have been in the Conſtellations of *our Saviour*, ſuch Wonders, and in ſo great a Number, that if we were to ſtick only to the natural and aſtronomical Reaſons, this *Jeſus* muſt have had all the Grandeur and Perfections the Concourſe of Stars can furniſh: But the chief Points that characteriſe him, muſt be *Compaſſion*, *Juſtice*, *Fidelity*, *Simplicity* and *Charity*, * not only for himſelf, but alſo for his Sectaries. He thinks, his Sect was to root itſelf in the World, ſo as to laſt until the return of the Eclipticks, that is 4000 Years, after which time there wou'd be a general Reformation in the Univerſe. He doth not ſay poſitively, that all what appeared Divine in *Jeſus Chriſt*, had depended from the Conſtellations; but he pretends it was God, who cauſed him to be born at that Juncture, to make his Birth memorable in all Ages. *'Tis with that Confidence*, ſays he, *that I thought proper to publiſh this Horoſcope, altho' I kept it ſecret more than twenty Years, by a Scruple of Religion.* Thoſe laſt Words render *Cardan* ſuſpicious; for, what reaſon was there to ſuppreſs, by a Scruple of Religion, a Diſcovery, which invincibly wou'd prove the Divinity of the Chri-

* *Cardan*, in Comment. ad Ptolomæ. Lib. 2. p. 369. Ed. Lugd. 1555.

ſtian

ſtian Religion, if it was a good one? But *Cardan* introduces into this Horoſcope certain Things, which are not altogether agreeable to the chief Articles of our Belief; and this is the Scruple which detained him: Thoſe ſort of cowardly Limitations and Precautions are commonly a ſign that there is a Snake in the Graſs.

Be that as it will, this is the Horoſcope; it is compoſed of ten rare and ſingular Characters *.

The ten Characters of *Jeſus Chriſt*'s Horoſcope according to *Cardan*.

1. The *Conjunction* of the *Heads of the Balance* of the eighth and ninth Orb, not only in the Elliptic Section with the Equinoctial Circle; but alſo with the Head of the Ram of the little Circle of the eighth Orb, in the Longitude with the head of the Ram, which makes the Center of the little Circle of the ninth Orb. From thence our *Italian* draws wonders about the laſting of Chriſtianity, and he advances boldly, that it will laſt 6030 Years; which far exceeds *Lactantius*'s Calculation, who gave it but 500 Years in all, and of that of Dr. *Craig*, who placed its Period in the Year 3153 †.

2. The ſecond Character of the Horoſcope is the Comet, which appeared at his Birth, being the ſame with that extraordinary Star, of which the Evangeliſt ſpeaks, which brought the Philoſophers from the remoteſt parts of the *Eaſt* to *Bethlehem* §.

3. The third is *Jupiter*, who promiſes ſedate Manners, gentle Deportment, Eloquence and Wiſdom. *For that Reaſon*, ſays Cardan, *our Saviour began to diſpute in the Temple being but twelve Years old.*

* *Cardan*, ibid. p. 373.
† See Dict. Hiſt. & Critique of Bayle, Tom. iii.
§ Evangel. Matthæi. Ch. ii. 2.

4. The fourth is the end of the *Virgin*, a Star of the firſt Magnitude, which has more of *Venus* than of *Mars*, and which portends alſo Eloquence, favour of Men and knowledge of Things to come. *And every one knows*, ſays he, *that Jeſus Chriſt prophecy'd.*

5. The fifth is the point of the Autumnal Equinox; *for he was born*, ſays he, *a Moment before Midnight.*

6. The ſixth is the Summer Tropick, which was in the middle of the Heavens at the time of his Birth: And according to *Ptolomy* ſignifies *a great Diſpoſition to eſtabliſh a new Law in the World.*

7. The ſeventh is another Star called *Hercules*, of the ſecond Magnitude and of the Nature of *Mars:* Which announced to him and his Sectarians Combats, and Sufferings of Martyrdom, to the Confeſſors and alſo all the Orders of religious Chivalry.

8. The eighth Sign is another Conjunction of the Head of the *Ram*, *Jupiter* and *Saturn* being joined in *Cancer.* This Conjunction portended him *a publick and ſhameful Death.*

9. The ninth is the Sun, which preſides over all the Conſtellations, and promiſes *a Death followed by an immortal Name.*

10. Laſtly, the tenth is *Mercury*, who joins there with the Sun, and appoints the ſenſe and hability of the Legiſlator. *And we know*, ſays he, *that the People* of *Paleſtine* were aſtoniſhed at *Jeſus Chriſt*'s Reſponſes, which came no doubt from human Wiſdom and not the Divinity, which may be without the Succours of Conſtellations. *And this*, concludes our Italian, *are the ten Signs of this wonderfull Conſtellation, by the concourſe of which we have ſeen a true*

Repreſentation

Repreſentation of the Wonders to come, ranged in the eternal Order of Things.

Now Sir, what ſay you to this Horoſcope? Is it not very juſt, conſidering it was made after the Time, and ſhould we not apply to *Cardan*, what the Author of the *Nouveaux Elemens de Geometrie*, ſaid to his brother Author of the *Art de penſer*; that *he had not gueſſed amiſs at Things paſt?* But among the reſt, what think you of the Paſſage, *that the Reſponſes of our Lord had not been the produce of Divine Wiſdom?* Is that the Language of a Chriſtian, or of a Man, whoſe Brains are confuſed, and his Eyes drowſy by Star-gazing? What he adds, *that then was ſeen a Repreſentation of the Wonders ranged already in the eternal Chain of Things:* Is that any ways edifying, or doth it agree with what he ſaid above, *viz.* 'that *God* is the firſt Au-'thor of that glorious Conſtellation? In truth, it coſts our *Italians* nothing to contradict themſelves; *Cardan* doth it ſometimes, and *Vanini* always.

Vanini's Thoughts on this Horoſcope.

What is your Opinion, the laſt thinks of this Horoſcope? He regards it as the moſt dangerous Venom that ever has been inſinuated againſt the Chriſtian Religion: For after he has rehearſed all what we ſaid above, he falls in a Paſſion and darts Fire and Flames, he fetches deep Sighs, and you would imagine he is going to be choaked *, *O perditiſſimos Sermones! O nefanda verba! O inquinatiſſimum Scriptorem!* 'Tis done, Chriſtianity is going to expire and nothing remains but to raiſe it an Epitaphe!

XXVIII. Nevertheleſs you ſee Sir, that this Horoſcope is of no moment at all. Aſtrology, according to the Sentiments of all Men of Un-

* See *Diſſertat.* vii. and viii. of the *Amphitheatre.*

derſtanding

derſtanding, is the moſt pitiful of all Sciences. Its Principles are Illuſion itſelf. Mr. *Bayle* has run it down in ſuch a manner, that it will never recover the Blow. See his *Penſées diverſes* and Vol. 1. *de la Rép. aux queſtions d'un provincial*, on this Head, and I am perſuaded it will move your pity to reflect, that human Minds have been amuſed with ſo trivial a Science. All *Cardan*'s Horoſcope is built upon two Illuſions, a certain *Fact* and an abſurd *Conſequence*. The *Fact* is, that we ſhould know the Day and Hour of the Birth of *Jeſus Chriſt*; but nothing is more doubtful than that Suppoſition. Conſult the Chronologers, and all will unanimouſly tell you, they are uncertain in that Reſpect, *viz.* about the Year, the Month, the Day, the Hour, and all what *Cardan* ſuppoſes as agreed upon. The abſurd Conſequence he draws from this Conſtellation is, that it ſeems to him ſo extraordinary, that it could not ſuit any one but *Jeſus Chriſt*; that there has never been any more glorious, and that without doubt *God* would not have cauſed him to be born under that Conſtellation, if it ſignified nothing. But *Cardan* does not perceive that his Conſequence is abſurd for ſeveral Reaſons.

1. He ſhould have proved before hand, the certainty of Aſtrology in general, and the ſolidity of a Horoſcope, before he made that of *Jeſus Chriſt*.

2. He ſhould be poſitively aſſured of the Year, Month, Day and Hour *Jeſus Chriſt* was born in; which he was not.

3. Were there no other Children born at *Jeruſalem* or *Bethlehem* about the ſame time, or perhaps the ſame Minute? Why ſhould then the ſame *Situation* of Stars be favourable to

Jeſus Chriſt and fatal to all the Infants of *Bethlehem?*

4. Laſtly, if there was any Appearance of all that, how came it to paſs that it never has been diſcovered but ſixteen Ages afterwards? *God* and Nature produce nothing in Vain: Why ſhould ſo important a Conſtellation have been hid from us ſo long a time?

How he anſwers the Objections of the origin of Evil.

XXIX. But I treſpaſs on your Patience Sir, and *Cardan* and *Vanini* abuſe mine, ſo that I ſhall ſay no more of theſe wild Notions. I have told you already that the Strength of the *Amphitheatre* conſiſts in reporting *Cicero*'s and *Cardan*'s Objections againſt Providence; and that is what he gives the greateſt attention to. He diſtinguiſhes one Difficulty from the other, thoſe of the *phyſical* and *moral Evil*, and he propoſes them all very preciſely. He forgets not the common Anſwers; but calls 'em Illuſions and Scholaſtical Filth. *Bagatelles*, ſays he, *the greateſt of* Bagatelles! when he alledges a judicious Solution. For Example, if you Anſwer to the Difficulty taken from the moral Evil; that *God would not make perfect Creatures, but ſuſceptible of Blame and Praiſe, and that with that View he has endowed 'em with a ſort of Liberty, which aſſiſted by Education, good Examples and Prayers, may reſiſt Evil, and procure itſelf by the goodneſs of* God *a diſtinguiſhing Glory upon Earth, and chiefly in Heaven.* He runs down St. *Baſil*'s Thoughts, which he introduces, in an abuſive manner. *Nugæ*, ſays he, *nugaciſſimæ. Nonſenſe*, ſays he, *God only is the ſovereign free Agent*, Jeſus Chriſt *alſo and the Holy Virgin; nevertheleſs they never have ſinned:* And behold the Solution annihilated, and the difficulty remaining in all its Force. But where are then all thoſe new and ſatisfactory Ideas, which

He ridicules St. *Baſil.*

are

are promiſed in the Title and Preface, and which ſhould be ſo remote from the Declamations of *Cicero*, the Ravings of *Plato*, and the Filth of Scholaſticks? 'Tis in vain for you to ſeek 'em in the *Amphitheatre*. He has none to give: He dreads the Inquiſitors; or when he hazards ſomething, that is pure Naturaliſm. *The World*, ſays he, *is perhaps an Animal, of which we all are Members: Thoſe Modifications are eſſential to it.* And thus finiſhes his profound Diſſertation and Apology on Providence *. And falls into Naturaliſm.

XXX. He goes yet farther; for he pretends that *God* is the Author of all Things, and even of Sin. *The knowledge of* God *is the Cauſe of all Things*, ſays he, *for that* God *ſhould know any Thing without himſelf, except he had reſolved ſo to do, is a thing which contradicts itſelf. Therefore knowing himſelf, as the Cauſe, he knows alſo all the Effects, and conſequently produces them* †. But if *God* has reſolved to create a free Being, will he ſtill be the Cauſe of its particular Determinations, or the abuſe of its Liberty? He doth not carry the Difficulty to that point. And elſewhere he laughs at the Decrees of *God*, and of Predeſtination, after a profane manner. He makes *God* the Author of Sin.

" Going down the *Rhine*, ſays he §, I embarked " at *Strasbourgh*, with a *German* Divine, who ſee- " ing a Raven, when he entered the Boat, was " ſo frighted, that he would go back: But I de- " clared to him, that, for my part, I was re- " ſolved to depart, if even I knew we were to " periſh. *The unalterable Will of God*, ſaid I, " *muſt be done; who from all Eternity has regu- " lated the Days of our Life; according to the " Words of the Prophet.* Encourag'd by this

* See Diſſertat. x. xi. xii. to xvi. of the *Amphith.*

† Amphit. Diſſert. xv.

§ Dialog. *p.* 425.

" Speech, he deſpiſed the terrible Menaces of " the *Rhine*, and we came ſafe to our Jour- " ney's End".

He compares *Chriſt*'s Miracles with thoſe of St. *Dominick*.

XXXI. What *Vanini* did with reſpect to the firſt Truths in general, he doth alſo in regard to Miracles. He puts 'em firſt as Proofs againſt Atheiſts: Afterwards he alledges the Objection of *Machiavel* and others, who regard them as Fables, contrived by Prieſts to acquire Glory at the expence of the Ignorant. The Anſwer to *Machiavel* as to Miracles was very eaſy. He had nothing to do, but faithfully to mark the Circumſtances, to diſtinguiſh 'em from Fables, *viz.* that they were numerous, conſpicuous, continual, and even perſecuted by human Authority, and yet followed by the Converſion of many thouſands of Souls. But inſtead of that, what does he? In the Apology of the Miracles of St. *Francis*, and St. *Dominick*: *In truth*, ſays he *, *both one and the other profeſſed Poverty and Humility: and conſequently 'tis not for Intereſt, or vain Glory, that they have publiſhed their Miracles.* What an Anſwer! *Vanini* would render the Miracles of *Chriſt* and his Apoſtles ſuſpected, and therefore he compares 'em to thoſe of St. *Francis* and *Dominick*. But he will not remember that our Saviour and his Apoſtles always lived among Enemies, where all their Words and Actions were equally obſerved to make them a handle for Calumny and Perſecution: Inſtead of that St. *Francis* and *Dominick* lived in Chriſtian Countries, devoted from a long time to Superſtition; and they were armed with the Thunderbolts of the holy Sea, to terrify or puniſh Gainſayers; *Dominick*, among others, was the Inventor and

Refutation of this Compariſon.

* Amphith. Diſſertat. viii.

firſt

firſt Hero of the Inquiſition. You may judge then, whether it was ſafe to conteſt his Miracles. But it was not ſo with thoſe of *Jeſus Chriſt* and his Apoſtles; there were ſure Rewards for thoſe who could overthrow or diſprove them.

XXXII. He is alſo very witty upon *eternal Puniſhments*: He declares firſt, that they cannot be proved from natural Reaſons; and when Scripture is alledged againſt him; *a holy Anſwer!* ſays he, *which however gives Atheiſts no great uneaſineſs, they having no more faith in that holy Book, than I in Æſop's Fables, in old Womens Tales, or the Superſtitions of the* Alcoran *.

He is witty upon eternal Puniſhments.

XXXIII. Laſtly Sir, in the whole *Amphitheatre* reigns an Air of Hypocriſy and Malice, which gives us a very diſadvantagious Idea of *Vanini's* Heart. We have quoted ſome Examples of it. And here is one more, with which I ſhall conclude the abſtract of that Book. *As to me*, ſays he, *whoſe Name is Chriſtian and Sirname Catholick, If I had not learned it from the Church, who is the infallible Miſtreſs of Truth, I ſhould hardly believe the Soul to be immortal. I don't bluſh to ſay it: On the contrary I glory in it, for I fulfill St.* Paul's *Precept, in captivating my Underſtanding in Obeiſance to Faith, which is ſtronger in me, becauſe 'tis built upon that Principle:* GOD HAS SAID IT †. That Principle, which at firſt Sight ſeems ſo edifying and is ſo ſubject of being repeated by Authors great and little, (*God* knows to what End) would be edifying to me indeed, if I had not been made to hope ſomething elſe by the Title and Preface. What! Mr. *Vanini*, you promiſe us Mountains and Wonders againſt Atheiſts, you take upon you

Hypocriſy reigns thro the whol *Amphithe atre.*

* Amphit. Diſſert. xxvii.

to

to explain all the Myſteries of Providence; you raiſe our Hopes with new Ideas in Defence of the firſt Truths; and inſtead of that, you ſend us back to Scripture. Was it worth while to write a Book for that? The meaneſt of the *Licentiats* at *Naples* could have done as much.

Add to this, that *Vanini* himſelf had no great Opinion of his *Amphitheatre*. He ſays in his *Dialogues*, that he had advanced there many Things which he did not give Credit to. " But, " ſays *Alexander* *, you have given a phyſical " Reaſon, in your *Amphitheatre*, why that Child " newly born, did ſpeak immediately after his " Birth. Puh! ſays *Julius*, I have advanced " in that Book many Things, I don't believe " my ſelf: *So goes the World.* I am not ſur- " priſed at it ſays *Alexander*, I tell it every " Day to my Friends: This World is a Neſt " full of Fools: I except however the Princes " and Popes.

XXXIV. Don't looſe Patience Sir, we are at laſt come to his ſtrange *Dialogues*, which are in ſo great Reputation and deſerve ſo little. Behold here the Title, which diſcovers the Impiety thereof. *Julii Cæſaris Vanini Neapolitani Theologi, philoſophi & juris utriuſque Doctoris, de admirandis Naturæ Reginæ Deæq; mortalium Arcanis, Libri quatuor. Lutetiæ apud Adrianum Perier. anno 1616. Sub privilegio Regis:* That is to ſay, Of the Myſteries of Nature, the Queen and Goddeſs of Mortals. Lib. iv. by *Julius Cæſar Vanini*, the Neapolitan, Doctor of Divinity, Philoſophy and Law at *Paris*. By *Adrian Perier*. 1616. with the King's Priviledge. On the back ſide of the Title you read the fol-

* Dialog. pag. 428.

lowing,

lowing Approbation, " We underwritten Doc-
" tors of Divinity of *Paris*, certify to have read
" theſe *Dialogues* of *Julius Cæſar Vanini*, a famous
" Philoſopher, and found nothing repugnant
" to the Catholick, Apoſtolick, and *Roman* Re-
" ligion in them; but on the contrary, I think
" 'em well worth being printed: The 20th of
" *May*, 1616. Signed F. *Edmond Corradin*,
" Guardian of the Convent of *Minimes* at *Pa-*
" *ris*. F. *Claude le Petit*, Doctor Regent.

The Dedication is to the Marſhall of *Baſſompierre*; it wou'd be good enough if it was not *Italian*, and cringing. *What ſhall I ſay*, ſays he, *of the Charms of your Beauty? 'Tis by that means you have deſerved the tenderneſs of an infinite Number of Ladies, more charming than the* Helens *of old. 'Tis alſo that ſame Beauty, which triumphs over the Conceitedneſs of Atheiſts, and impoſes on them Silence, and ſuppreſſes their Impiety. For when they but contemplate the Majeſty and Statelineſs of your Viſage, they muſt readily own, that even among mankind there are found ſome Traces of Divinity.* His Enthuſiaſm carries him yet farther, and betrays him. *If I was*, ſays he, *a Diſciple of* Plato, *I ſhou'd kiſs and adore you, as the Soul of the World!* A villainous and very ſuſpicious Commendation, after the Story of the Convent, which I told you! * The Dedication baſely flattering.

He finiſhes his Dedication, asking a Charity of his Heroe, in ſo pitiful a manner, that I am aſhamed to relate it, *pudendâ, miſerandâque oratione*, if you allow me the Expreſſion of *Suetonius*. He tells him that 'tis not ſurpriſing that every body compares him to the Sun; and that he, *Vanini*, gives him the Preference above it. † *The Sun*, ſays he, *darting his golden Rays, has never* He asks Charity.

* See Paragraph XIV.

† Dial. Epiſt. *Nuncupator.*

enriched

enriched me, but when your Excellency ſhall pleaſe to caſt a favourable Eye upon me, I ſhall then be all Gold. Juſt now the Marſhal was the Soul of the World, in the *Platonick* Stile, and all at once he is no more than the Sun; but then the Rays of his Aſpect are ſo many precious Ingots, that will make our Infidel eaſy. He has great need of it, ſince he makes no ſcruple of ſhewing us the Bag and Stick of *Diogenes*. 'Tis true, his Compariſons are not very philoſophical; but at that time they were faſhionable. The Sun was the Soul of all witty Performances; it entered every where, even into the Epiſtles Dedicatory. *Malherbe* and *Voiture*, like the reſt, dealt much in *Rays*, and perhaps wou'd do ſo ſtill, if *Boileau* had not ridiculed that ill Taſte in his firſt Poem *. "*Authors of that Age*, ſays "Mr. *La Motte*, with a Sneer, † *knew* only to "give their Miſtreſſes a Preheminence above "the *Aurora*, or Sun: Almoſt all the Per- "formances in Poetry turn'd upon that To- "pick, and I cannot conceive how they could "handle ſo often an Expreſſion, which muſt "put a Man out of Patience at firſt ſight.

An Approbation of his Dialogues, by many learned Men.

XXXV. The Advertiſement which follows the Dedication of the *Dialogues*, recommends the Book as a Maſter Piece, which two Diſciples have induſtriouſly compiled from the Author's Lectures, to favour the Bookſeller and Publick. *Vanini* is there named *the Prince of the Philoſophers of his Time*, and Ariſtotle *revived: Unicus ætate noſtra verus Philoſophorum Princeps & Ariſtoteles redivivus. Eminentiſſimus & toto Orbe clariſſimus Vir.* Beſides, he is praiſed in *Greek* and *Latin* Verſes. One *George Certain*, a Phyſician at *Paris*, makes no Difficulty

* Diſcours au Roy. *Boileau* Tom. 1.
† *La Motte* Diſcours ſur la Poeſie. Tom. 1.

to

to aſcribe him a great ſhare of Senſe, a ſuperior Capacity in Reaſoning; and the Laurel above all *Italian* Writers.

Vaninus, vir mente potens Sophiæque Magiſter
Maximus, Italiæ decus & nova Gloria Gentis.

'Tis difficult to comprehend, how any Doctors and Poets, at *Paris*, were bold enough to approve, and praiſe ſuch Dialogues, with ſo much Proſtitution. Was it Ignorance? Was it Malice? ſays Mr. *de la Croſe*; Ignorance from the ſide of the Divines, and Malice from the Poets*. You'll ſee, Sir, from the Character I am going to give you of the Book, that the Reflections of that learned Man, were not without Ground.

XXXVI. If by the *Amphitheatre*, he had in view to make Atheiſts Philoſophers, I doubt not but by his Dialogues, he propoſed to make profane Men Atheiſts, and to hurry them into Debauchery, after having given 'em a Diſlike to Religion: The Concluſion of the Book is Deſign of the Dialogues, and a general Idea of the Book.

Perdutto e tutto il tempo
Che in Amar non ſi ſpende.

All the Time is loſt which is not ſpent in Love.

He reaſons there but very little on matters of Religion, he rails continually, and ſome-

* *Garaſſe* takes off the difficulty in his *Doctrine Curieuſe*. p. 998. I muſt here diſcover his raving Deſpair---- in as much as we know this pernicious Atheiſt, after he had obtained the Privilege and Approbation of the Doctors, he malicioufly changed his Deſign, and put in the Preſs, inſtead of what they had ſeen, this imperfect Scheme of Atheiſm, and what is ſtill worſe, put to the Front of it a Title, which wou'd not have paſs'd under the Seal of *France*, or the Pens of the Doctors, if they had look'd thoſe Words in the Face. *De admirandis naturæ Reginæ Deaque*, &c.

times in a ſhocking manner, without taking the trouble of covering his Impieties.

The whole Work is divided into Four Parts, which all make ſixty Dialogues. The 1ſt Part contains fourteen of them, treating of the Sun, its Figure, Colour, its firſt Mover, its Poles, and Eternity: Of the Stars, of Fire, of Comets, of the Rainbow, of the Thunder and Lightning, of Snow, Rain, Motion and Reſt; of Gun-Powder, Air and its Corruption. The 4th, 5th, and 6th contain moſt impious Sentiments.

The 2d Part is compoſed of thirteen Dialogues, chiefly upon that part of Natural Philoſophy, regarding the Earth and Water. *Cardan* and *Ariſtotle* are there copied every where.

The 3d contains twenty three Dialogues, where he examines every thing regarding the Generation of Animals, and the different Paſſions of Men.

Laſtly, The 4th has but ten Dialogues upon the Religion of the Heathens, which he abuſes in ſuch a manner, that it appears one may attack the Chriſtian Religion, under pretence of confuting the Pagans. Here he diſcovers his Venom very openly, both upon the Oracles, the Miracles, the Gift of divers Tongues to the Apoſtles, and the Paradiſe and Hell. Afterwards he finiſhes deploring the Time one looſes without loving; ſubmitting at the ſame time his Book to the Examination and Judgment of the Holy See. You'll excuſe me, Sir, for not following him here Step by Step: My Letter wou'd ſwell too much, and be too tedious to you. I ſhall content my ſelf with giving you an Abridgment of his Syſtem, in regard to Religion.

——— *Longa eſt materia, longæ.*
Ambages, ſed ſumma ſequar faſtigia rerum. *

* Virg. Æneid. *Lib.* 1.

XXXVII.

XXXVII. Firſt, no body can deny his being a *Materialiſt*, which is what we now-a-days call a *Spinoſiſte*. He ſeems to be a *Materialiſt*.

In refuting *Pomponatius*, who held, that certain Intelligences mov'd the Heavens, he concludes his Reaſoning againſt him in this manner, "If God (ſays he) is the cauſe of all "things, and if he is omnipreſent, Where is, "I beſeech you, the neceſſity of your Intelli"gences? If his Omnipotence is much more "than ſufficient to have created the Heavens, "and adorn'd them with admirable Ingenuity, "without the Interpoſition of any Creature, "why will you have it, he cannot move them "without their Aſſiſtance?"

Would you not ſay, Sir, it is the force of Truth makes him thus ſpeak? But hold, be not deceived: A little while after, *Alexander* reſumes the Diſcourſe, and by the Genius of *Pomponatius*, he conjureth his Diſciple, *Julius Cæſar*, to declare unto him openly his Thoughts concerning the firſt Mover of the Heavens. *Vanini* yields to his Requeſt, and utters this Confeſſion. * *Had I not been educated*, ſays he, *in the Schools of Chriſtians, I would aſſert, that the Heaven is an Animal, mov'd by its own Form; which is its Soul:* But perceiving himſelf too forward in his Aſſertion, he adds, *becauſe a ſcrupulous Piety hath ſeized the Underſtandings of ſome Perſons, and hinders them from attributing a Soul, to the World, What dare we then freely profeſs - - -? This* (continues he) *That the Maſs of Heaven, which is globular, is mov'd ſpherically, by its own Form.* He ſays the Soul of the Heaven is its Form.

Were I not a Chriſtian, (ſays he in another place) † *I ſhou'd embrace that Opinion, of the Eter-* That if he was not a Chriſtian, he would conclude for the Eternity of the World.

* *Vid.* Dial. IV. † Dial. p. 135.

nity of the World, becauſe I can find no Origin of Mountains. The Foundation of his Atheiſm is very particular, he cannot diſcover the Origin of Mountains, as of Republicks; therefore the World is Eternal. 'Tis pity he did not live in this our Age, when Dr. *T. Burnet* would have taken him out of that Difficulty, by his Syſtem of the Cauſes and Effects of the Deluge, ſo excellently treated of in that ingenious Work. *

That the ancient Philoſophers believed ſo as well as himſelf.

A little lower he ſets forth the ſame Impiety, as the Opinions of the antient Philoſophers: "For according to them, (ſays he) but eſpecially † *Plato* and *Ariſtotle*, the World is Eternal - - - - - Wherefore the Cuſtoms and Rites "which are now in uſe, have been repeated "above one hundred thouſand millions of "times, and will be again as often as they "have been. Nothing is new under the Sun, "and this Viciſſitude being Eternal, its Cauſe "muſt be ſo likewiſe: Now this Cauſe can be "ſought for but in the Cæleſtial Bodies in God "and the Intelligences; therefore it is by "the Influence of Cæleſtial Bodies, guided by "Intelligences, appointed by God, that Laws "take their Riſe, Increaſe, and their End."

He makes a God of Nature, and nevertheleſs allows it imperfect.

Proceeding a little farther, he intirely throws off his Veil, and calleth *Nature* a *Faculty of God*, or rather, *God himſelf*, defining it by *Motion*, apologiſing for the Faults or Imperfections, which are found in it by the Example of *an Artificer, who having groſs and diſorder'd matter to work upon, cannot ſucceed to make it perfect. In like manner*, ſays he, *Nature having found ſuch kind of matter, produces every thing imperfect.* Here is then a God, dull and unactive: A firſt

* *Telluris Theoria Sacra*, &c. † Dial. LII.

Cauſe

Cauſe full of Imperfection. It finds out a diſorder'd and irregular matter to work upon, and this matter is no other than itſelf; and hence is the Origin of moral and phyſical Evil cunningly diſcover'd. But let us hearken again to our Atheiſt.

In what Religion (ſays *Alexander*) have the antient Philoſophers ador'd God? "In the Religion of Nature only, (replies *Vanini*) which "Nature is itſelf that God, ſince it only is the "Origin of the Motion impreſs'd in the Souls "of all Men. All other Religions, according to "thoſe antient Sages, were but Illuſions; not "forg'd by any good or evil Genius's, (for they "never believ'd there were any ſuch Beings) "bnt by Princes and Magiſtrates, in order to "curb their People; and fomented by ambitious and covetous Prieſts, which, inſtead of "true and real Miracles, to confirm its Veracity, made uſe of certain Scriptures, the Originals of which are no where to be found; "and of which the Rewards and Puniſhments "regard but another Life, fearing that the "Impoſture ſhou'd be too early diſcover'd in "this. For, added they, Whoever return'd "from thence? Thus it is, the Vulgar is kept "in Slavery, by the pretended dread of a ſupreme Being, that Beholds all things; and "will Reward and Puniſh. *Lucretius*, the Epicurean, hath ſung this Truth.

He treats Religion as being of pure humanInvention, and imagines Fear hath occaſioned the firſt Gods.

* "Fear, in this World, hath firſt occaſion'd "Gods." Such is the Religion of *Julius Cæſar Vanini*, and the impious Syſtem from whence *Spinoſa*, and all the other Infidels of our Age, have extracted their Opinions. And

* *Vanini* is miſtaken, it is not *Lucretius* hath ſaid this, it is *Petronius*, in the Fragments we have remaining of his. See Mr. *Burman's Petronius*. P. 676.

there

there is a Manuſcript in *Holland*, among the Curious, in which the above Paſſage is often repeated: So greatly hath it dazled ſuperficial Minds.

A ſhort Anſwer of Mr. *Bernard*, to thoſe that confound God with Nature.

XXXVIII. " But what is that Nature, * thus put for the Wiſe God? (ſays a judicious Journaliſt) Is it an univerſal Nature, that expands itſelf in all Creatures, and makes them what they are? If ſo, that Nature muſt be intelligent, ſince it communicates Intelligence to certain Creatures: And this is exactly the God we adore, omnipreſent to all Beings, and their ſole Creator. If by that Nature they underſtand the particular Nature of each judicial Being, and which is not ſeparate from the Being itſelf, we ask, Who is the Author of thoſe particular Natures; are they Eternal, or do they produce themſelves? They are not the former, ſince the ſame with thoſe Beings, we perceive, are brought forth and die; and to ſay they are the latter, is a monſtrous Abſurdity. If they further aſſert, that thoſe particular Natures, are diſtinct from thoſe Beings, in which they inhere, and to whom they give Being: We ask again, Have they any Idea of thoſe Natures? If they have not, they know not that they ſay. And if they have, let them be ſo good as to communicate it to us; then we ſhall make it eaſily appear, they muſt neceſſarily recur to a ſupreme intelligent Principle." This is an Argument often made uſe of againſt thoſe Atheiſts, and which we muſt not ceaſe repeating, until they have produc'd new Cavils. They perpetually affirm, it is Nature made all things; but what

* Nouv. de la Rep. des Lettres, *Novemb.* 1709. p. 494.

do

do they really mean by that Nature? Let them but give us a clear and diſtinct Idea of it; let them inform us how the various parts of matter became organiſ'd of themſelves? How they can think, and, in ſhort, how they are depriv'd of, or loſe that Faculty of Thinking? Let them but cooly peruſe the laſt of the * Biſhop of *Cambray*'s Works, and unfold to us, if they can, the Mechaniſm of the World, without the Suppoſition of an all-wiſe Atheiſt.

Vanini, without the leaſt ſhadow of Proof, dogmatically aſſerts, that all Religions are the Inventions of Princes. But this is what he could not ſay of the Chriſtian, ſince all the Remains of antient Hiſtory conſpire to diſprove him. He tells us, the Originals of our Scriptures are no where to be found: As if that prov'd any thing againſt thoſe we poſſeſs, or that innumerable and authentick Copies are not of the ſame Force and Value, in hiſtorical matters, as the Originals themſelves. The Promiſes and Threats in the Goſpel, relate chiefly to a future State, it's true; yet it doth not from thence follow, but that the Wicked are often chaſtis'd and puniſh'd in this; as *Vanini*, and ſeveral others.

XXXIX. Have you a mind to know, Sir, what are his Thoughts concerning the Origin of Mankind? This again, is a troubleſome Precipice, in the way of thoſe Infidels; nor do they indeed, know how to eſcape it; they are drove, about this matter, into difficult Straights: It is here they abandon their Reaſon, and talk extravagantly. "Men ſprang forth like Muſh-
"rooms (ſay they). *Diodorus Siculus* imagines the
"firſt Man was brought forth out of the Slime
"of the Earth (ſays *Vanini* †) but if ſo, ob-

Origin of Mankind, according to *Vanini*.

Opinion of *Diodorus Siculus*.

* Demonſt. of the Exiſt. of God, 2d Edit. *Paris*.
† Dial. XXXVII.

ſerves,

" ſerves *Alexander*, how doth it happen, that " in five hundred thouſand Years, ſince " which, the World hath form'd itſelf, (ac- " cording to that Atheiſt) there has been " none brought forth in that manner? Ne- " verthleſs, he is not the only (replies *Va- " nini*) who hath taken that Story for Truth, " and is aſſur'd, that by the concurrence of the " Stars it is very practicable —— and this is " the Opinion of *Cardanus*: He pretends, that " as the ſmaller Animals, Mice, and Fiſhes, " are produc'd by Putrefaction, it is very prob- " able, that the greater Animals, and even all " in general, are deriv'd from them alſo. A " handſome Method of reaſoning, (replies *Alex- " ander*) a Mouſe may be brought forth out of " Putrefaction, therefore a Man may alſo ——! " Are there not now ſufficient heaps of Filth " and Slime? Why then is there not ſometimes " a Horſe, ſometimes an Ox produc'd from it? " That's right, (ſays *Vanini*) but *Diodorus Si- " culus* relates, that in a certain part of the *Nile*, " where it overflows, leaving behind it as it " were a Bed of *Mud*, which as ſoon as it is " heated by the Sun, there are produc'd from " it, Animals of a monſtrous Size. That's " well, (ſays *Alexander*) but as for me, I could " never ſubſcribe to ſuch a Lye.

The ſame with that of *Cardanus*.

This is not all. *Vanini* reſumes the Diſcourſe, and goes on, ſaying, " Others have dream'd, " * that the firſt Man has taken his Origin " from Mud, putrified by the Corruption of cer- " tain Monkeys, Swine, and Frogs; and thence " (they ſay) proceeds the great Reſemblance " there is betwixt our Fleſh and Propenſions, " and thoſe of thoſe Creatures. Other Athe-

Strange Fancies of ſome Atheiſts about it.

† Dial. *Ibid.*

" theiſts more mild have thought that none
" but the *Æthiopians* are produced from a Race
" of Monkeys, becauſe the ſame degree of
" heat is found in both. Truly (replies *A-*
" *lexander*) I wonder that thoſe People can diſ-
" pute the excellency of Man above other
" Creatures, when they behold the uprightneſs
" of his Structure. Well! (anſwers *Vanini*)
" Atheiſts cry out to us continually, that the
" firſt Men went upon all four as other Beaſts,
" and 'tis by Education only, they have changed
" this Cuſtom, which, nevertheleſs in their
" old Age returns again. I ſhould be glad
" to ſee the Experiment (ſays *Alexander*) If a
" Child juſt born, and brought up in a Fo-
" reſt, ſhould walk upon all four. But let us
" abandon thoſe Deliriums to Atheiſts, and
" hold to the Rules preſcribed by our Faith.

If the firſt Men went upon all four.

Is it poſſible in ſo ſmall a ſpace to heap together ſuch wretched Nonſenſe! The formation of Animals attributed to Putrefaction, the corruption of other Creatures or the poſition of the Stars, and amongſt the reſt, the *Æthiopians* to the race of Monkeys; however, if he had ſaid, that the firſt Monkey was brought forth by a Devil and a She-Moor, that might have been more likely; but it ſhould be conſider'd an *Æthiopian* hath Reaſon, a Monkey hath none, and that no Being can communicate to another, what it hath not itſelf. And what do you think Sir, of thoſe Men who walked upon all four, and now their Deſcendants upon two? It is certain, it is by Induſtry and Education, for if a Child was brought up in a Wood, he would undoubtedly live as the Monkeys and Bears; and in that Caſe Experience might make for *Vanini*. A Man of Credit aſſured me, that there was found

in *Denmark*, a young Man of about fourteen or fifteen Years old, who lived in the Woods with the Bears, and who could not be diſtinguiſhed from them but by his Shape. They took him, and learned him to ſpeak; he ſaid then, he could remember nothing but only ſince the time they took him from amongſt the Bears. But whence comes that Induſtry equally amongſt all People of the Univerſe? Why is there not ſome Iſland, ſome Tract, where Men now walk upon all four? Why are they at preſent all *Bipedes?* There can be given but one of theſe two Reaſons; either becauſe that *God* created him in that Poſture, in which he hath preſerved himſelf in an uninterrupted Traditional Education, or becauſe that ſuch is the very Nature of his Being, and that that Induſtry which *Vanini* attributes to him is natural and eſſential.

XL. What he adds concerning the Power of Man above other Creatures is alſo as impious *.

If Man has been formed to governBrutes

As for me, (ſays *Alexander*) I always believed that Man had been made to maſter and govern Brutes. How (replies *Vanini*) dare you ſay that "Man can maſter a Baſilisk? Yes, (anſwers *Alexander*) and ſometimes kills him; and the "Baſilisk ſometimes kills the Man (replies *Julius*); and where is that Man that ever framed "a Republick for the Government of Baſilisks, "Bees, Swallows or Eagles? Truly though "Man can ſometimes catch them, he is oftner "yet caught by them. The Crocodile knoweth well how to prey on thoſe who drink "along the *Nile*, ſecuring them in the winding of his Tail: And the Polypus ſpares not "the Divers".

* Dial. xxxvii.

To

To this *Alexander* judiciouſly anſwers, "That "our Natures are no more the ſame ſince the "Fall": And Sighs in reflecting on the Felicity of our firſt Parents. "Groan not (anſwers "thereupon, *Vanini* in an ironical and profane "Manner) Man ſince the Fall maſters the "Sheep, and could before the Fall, even the "Serpent." —— He pauſes here, as if *Alexander* interrupted his Diſcourſe, who upon that, tells him *he underſtood what he meant.* "This I "will ſay (ſays *Julius*) O happy Crime that "has procured us ſo great a Redeemer, for "now we not only are Maſters of all Creatures, but we have even the Angels for our "Inſtructors. But let us leave this I pray you "to the antient Sages of the *Sorbonne*; let us "rather exert ourſelves in philoſophical Matters". Thoſe are ſome of his common Tranſitions, after having ſufficiently derided the Myſteries of Chriſtianity. Profane Notions of *Vanini* concerning our firſt Parents.

XLI. But nothing can come up to his Impiety in the Parallel he draws between the Empire of *God* and that of the Devil, I heſitated ſometime, whether I ſhould tranſcribe it in *French*. I determined at laſt to do it, upon conſidering that Mr. *Bayle* had already as good as done it in the Article of *Xenophanes*, which is no other than an Illuſtration of *Vanini*'s Arguments: Moreover, that it coincides with Mr. *Bayle*'s chief Difficulty concerning the Conſequence of moral, and the extent of phyſical Evil, but ſuffer me for once to act contrary to my Inclination. His Impiety in making the Devil ſuperior to God.

Exhorreſco referens!

* "One may infer from the Canon of the "*Scriptures* (ſays *Vanini*, perſonating a Liber-

* *Dial.* p. 420.

" tine) that the Power of the Devil is greater " than that of *God* himſelf. It was againſt " the Will of *God* that *Adam* and *Eve* fell, " and loſt all Mankind; and even when the " Son of *God* came in the World, to attone " for that Evil, the Devil animating the Mind " of his Condemners, *Chriſt* declares, that that " *was his time and the Power of Darkneſs*, and " ſo ends his Life by a moſt infamous Death. " One may likewiſe ſay, that according to thoſe " Scriptures, the Will of the Devil is more " effectual than that of *God*. God *wills that* " *all Men ſhould be ſaved*; Nevertheleſs, there " are few that endeavour it: The Devil will- " ing that all Men ſhould be damned. There " are an innumerable Many. Amongſt the " Multitude of the Inhabitants of the Earth, " the Roman Catholicks only can be ſaved, if " from theſe you ſubſtract the *Jews*, hidden " Heretics, Atheiſts and Blaſphemers, Simo- " niſts, Adulterers and Sodomites, *all which* " *ſhall not inherit the Kingdom of Heaven*, ſcarce " can you then find one in a Million. In like " manner, under the Law of *Moſes*, all the " Univerſe was under the Power of the Devil: " The *Hebrews* only excepted, that adored the " true *God*, which were Inhabitants of a ſmall " Tract, not exceeding the extent of the Iſland " of *Great-Britain*, and who even alſo often " forſook his Worſhip; nay, when they moſt " ſtoickly adhered to it, they were yet tor- " mented by the Devil: It is thus (adds he) " that Blaſphemer argued.

Mr. *Bayle* has illuſtrated this *profane parallel.*

Take the trouble, Sir, to read over again the Article concerning *Xenophanes* in the *Hiſtorical and Critical Dictionary*, and you'll ſee this difficulty illuſtrated. Mr. Bayle makes uſe of all his Rhetorick, and without having read our Atheiſt, as it

it appears by his Quotations, he falls exactly into *Vanini*'s Method of Reaſoning. "My other "Obſervation * (ſays he at the End of his Ha-"rangue) is yet more deciſive. The Catho-"licks and Proteſtants agree in this, that there "are very few but will be damned. They "ſave but the Orthodox who live well and "repent of their Sins at the point of Death: "They do not deny but an habitual Sinner may "be ſaved in caſe of a good Death-Bed Repen-"tance; but yet they maintain, that nothing is "more ſcarce than ſuch a Repentance. Ac-"cording to that then it is evident, that for "one Man ſaved, there may be a Million damn-"ed: *Vanini*'s Expreſſion exactly. *Vix è mille "millibus unus electus aderit*". I can aſſure you Sir, this Article gave no ſmall trouble to the Commiſſaries of the Conſiſtory of *Rotterdam*, who were appointed for the Examination of the Dictionary, as may be ſeen by their Regiſters. Conſider alſo, that *Vanini* no ſooner has given the Poiſon, but he adminiſters the Antidote, and anſwers as well as he could to the Libertines Argument. But in the Article of *Xenophanes*, there is not the leaſt anſwer attempted to that Objection, although it is urged with all the Strength and Eloquence the Author was capable of. In the mean time, this Objection is the ſame as that of moral Evil and phyſical Evil, conſidered both together as a neceſſary Conſequence of the former.

I ſhall then at once anſwer (to *Vanini* and all others who are deceived by this Illuſion) that

An anſwer to *Vanini* and all others dazl'd with this Objection.

* Hiſtorical and Critical Dictionary in the Article of *Xenophanes* Paſ. 3037. col. 2. the difficulty, which is but ſhort in *Vanini*, is there at large, the Author employing two Columns and a half in Illuſtrating it, and I think, with more pains than any other part of the Dictionary.

God

God is always the ſupream Power and Maſter, although he ſuffers the Devil to act at ſome times, and that it is both conſiſtent with his Majeſty and Perfections ſo to do: That it is not true, it was contrary to the Will of *God*, that *Adam* and *Eve* fell, ſince he permitted it ſhould be ſo. He created them free, and conformable to that Freedom they were to Act: That it is falſe that all Nations except the Jews only, were under the Dominion of Satan; and that it is yet more falſe, the *Jews* were unhappy, even when they acted according to the Will of their Maker: That it is abſurd to ſay the Devil contrived the Death of the Son of *God*, which is evidently demonſtrated in the Goſpels, by our Saviour's rejecting the Advice of St. *Peter*, as the Temptation of an Evil Spirit, and his Declaration of that *being his Hour and power of Darkneſs* ſignifying no more than that a liberty was given to the Prince of Darkneſs, as that to *Pilate*, *Thou ſhouldſt have no power over me* (ſays he to him) *were it not given unto thee from* God! Further it ſhould be conſidered, it is both raſh and unreaſonable to determine as ſome do, that of a Million of People there will be ſcarce one ſaved; that if *God* wills that all Men ſhall be ſaved, it muſt be underſtood that that muſt be in a manner conformable to his Wiſdom and worthy of the Cauſe of Virtue: And if he wills there ſhall be few, it is to manifeſt the excellency and dignity of ſuch a Salvation; and in ſhort, that it is abſurd and imprudent to determine without a poſitive certainty that the Number damned will be greater than the Number ſaved, ſince at his Pleaſure *God* can annihilate the Devil and all his Conqueſts; and in the remaining duration of the World encreaſe the Number of

the

the Elect by the converſion of the Hereticks, Jews, Turks and Idolators, according to his Predictions, as the Sand of the Sea.

XLIII. I have already told you Sir, *Vanini's* Opinion concerning the Immortality of the Soul, you may ſee it here above, at the eighth Chapter, where I ſpeak of *Pomponatius* and *Cardanus*. Our Author copies from them both in his *Amphitheatre* and *Dialogues*. He openly ridicules the taking up of *Elias* into Heaven, who caſt himſelf down, he ſays, in ſome Precipice to impoſe upon the People, and make them think he was ſuddenly taken up by *God*. It is true, he quotes this here as from *Cardanus*: But repeats it as his own, and after having ſpoken of *Moſes* and *Elias*, of which the Atheiſts have the ſame Thought, this is the Tranſition he adds: But let us abandon thoſe trifling Tales; *quæſo mittamus has negaciſſimas abellas* *.

Vanini ridicules the taking up of *Elias* and rails at the Immortality of the Soul.

Notwithſtanding *Alexander* is not yet ſatisfy'd; and intreats his beloved Maſter to explain to him his Opinion, about the Soul's Immortality, to which † *Vanini* anſwers, that he deſired to be excuſed from ſo doing; why ſays *Alexander?* Becauſe (replies the other) I have vowed not to trouble myſelf about that Queſtion until I become old, rich, and a *German*. I muſt tell you, it is obſervable he never loved that Nation, uſing them very freely in the whole of his Dialogues. But had he lived in our Days, and had the advantage of knowing them better, I doubt not but he would have changed his Tone. Good Senſe and Virtue are Qualifications belonging to all Nations. The late Queen of *Pruſſia* and her

He does not love the *Germans*.

Defence of the *German* Nation.

* Dial. I. † Dial. p. 492.

Mother

Mother the Princeſs *Sophia* Electreſs Dowager of *Hanover*, of whom we mourn the loſs, are perpetual Monuments to vindicate the worth of their Nation, in oppoſition to all indiſcreet Reflections of Strangers. Father *Bouhours*, a *French* Jeſuite, asked in one of his Dialogues, if a *German* could be a Man of Senſe? But a *German* in return, asked, if a *Frenchman* could have Judgment? In ſhort, the Conduct of *Vanini* was very imprudent, ſince *Baſſompiere*, the Hero of his Dedication was a *German*, and moreover, a Man exceeding compleat and knowing.

He ridicules the Laws of *Moſes*.

XLIV. He proceeds with abſurd witticiſms upon the Law of *Moſes*: He tells us he does not love Hogs-Fleſh, and for fear of ſcandalizing the *Jews*, he ſeldom or never eats any: Often he ſeems to inſinuate that their Law-Giver, forbad it only out of Policy, it being very pernicious to the Leproſy; a diſtemper they had brought with them out of *Egypt*, and which, even now, it is pretended they are much ſubject to. He likewiſe tells us the obſervation of thoſe different Degrees of proximity in Marriage is mere human Invention: And further affirms, that were the nigheſt Relations to marry they would ſo reliſh the ſweets of it, that it would render them incapable of any other Occupation, and that as to the Crime he can find none. Moreover, that the antient Patriarchs did lay with their nigheſt Relations, and even to this Day it is practiſed amongſt the *Perſians* †. You ſee he makes quick Work and diſpatches it in few Words. He thinks *Moſes* acted wiſely to eſtabliſh Sword-in-hand, a new Religion, ſince all other Forgers of Sects that

* Dial. p. 46. † Dial. p. 328.

did

did not go that way to work have periſh'd. But let us ſee what he ſays againſt the Chriſtian Religion, becauſe I am almoſt tired of tracing ſuch groſs Impieties.

His Thoughts concerning the Chriſtian Religion.

XLV. According to him it is founded in Simplicity. The Original of the Scriptures are loſt; there is nothing certain in the Goſpels: Its Promiſes and Threatnings have no relation to this Life, but that which is to come; therefore not to be minded. The Miracles of *J. Chriſt*, are like unto thoſe of St. *Anthony*, and St. *Dominick*, and likewiſe not to be heeded *. As to the Martyrs for it, that proves nothing, ſince Vain Glory and Melancholy (not Evidence, and a ſincere Conviction) were the Reaſons of their Suffering. †* Beſides, have not all Religions (*Jewiſh*, *Mahometans*, *Roman Catholicks*, and *Calviniſts*) had their Confeſſors and Martyrs. Read (ſays he) the Reign of *Mary* Queen of *England*, and you'll ſee how many Proteſtants dar'd Death for their Religion. If Chriſtians are ſo firm in their Perſuaſions, it is becauſe St. *Paul* has had cunning enough to repreſent to them Marriage, as a Sacrament, and an Image of the Union of J. Chriſt with his Church: And is not that ſufficient to produce a ſtubborn Faith **? He thinks there is a good Reaſon for the ſame Apoſtle's having foretold an Antichriſt, and his deſcribing him with ſuch ſcandalous Marks, ſince, upon conſidering his Character, no body will be willing to apply it to himſelf; ſo that Chriſtianity will triumph, and remain ſafe ‡. He alſo complains, that St. *Paul* ſhould have prophecy'd of that Antichriſt as near his Time; ſince there was then paſt, in his Days, XVI Centuries: † And that Prediction was not yet

And its Martyrs.

He profanes St. *Paul's* Compariſons about Marriage.

And on the Antichriſt.

* See above, § 32. †* Dial. p. 357. ** Dial. 357
‡ Dial. L. † Dial. *ibid.*

accompliſh'd. He forgets thoſe ſame Proteſtants of which he juſt now ſpoke; and he will not remember that they have always eſteem'd the Pope as ſuch. From St. *Paul* he paſſes over to Jeſus Chriſt, of whom he relates ſome of his Anſwers, ridiculing them by his execrable Irony: *Sapientiſſima hæc ſunt Chriſti acta* *! This is the great Wiſdom of Chriſt! But it is objected, that Chriſt offer'd himſelf voluntarily to Death: Which he would not certainly have done, had he not been convinced of the Truth of his Miſſion. Ay, † (ſays *Vanini*, perſonating an Atheiſt) it is the part of a wiſe Man, to deſpiſe tranſient and ſhort Pains, to acquire an immortal Name. This is the Impiety which he boaſts of having refuted, in his Book *of the Contempt of Glory*. †* Upon the Myſtery of the Euchariſt he is likewiſe profane, adviſing Mariners, or Seafaring Men, which are generally more ſubject to Paſſion than others, to partake often of that Holy Sacrament, as an aſſur'd Lenitive for their *atra bilarious* Humours.

His deteſtable Irony concerning Jeſus Chriſt.

XLVI. Upon the Gift of Tongues, which the Apoſtles were endow'd with on *Whitſunday*, he revives the ancient Accuſation of the *Jews*; and for a farther Illuſtration of it, makes uſe of certain *Platonick* Notions, which he derides in his *Amphitheatre*. § He ſays our Souls poſſeſs in themſelves the Knowledge of all Languages and Sciences, ſince they are deriv'd from the Deity himſelf, and partake of his Eſſence: But being depreſs'd by the Weight of material Bodies, they find much the ſame Reſiſtance in the Exertion of their Strength, as a quick Fire cloſe cover'd with Aſhes. So that the Fire of our Underſtandings ſhou'd be

His Opinion about the Gift of Tongues which the Apoſtles were endowed with.

* Dial. L. † Dial. *ibid.* †* See above, *Ch.* 21.
§ Dial. LIV. p. 408.

ſtir'd

ſtir'd up, if we would have thoſe thick and groſs Humours diſſipated, and bright and pure Light ſhine forth: That therefore all our Knowledge is but a kind of Memory, as *Plato* obſerv'd. This being laid down, he adds, that when there is a quick Ebullition of the Humours, there reſults a vehement Agitation of the Spirits, which being convey'd with Rapidity to the Brain, drives out as it were the Knowledge of thoſe different Tongues, which are there hidden, juſt as the Blow of one Flint Stone, makes a Spark of Fire fly out of the other. That it is known from Experience, that during the Dog-days, a Perſon attack'd with a violent Fever, ſpeaks often Words of different Tongues; and that Perſons having drank plentifully of good Wine, from ſtupid inſipid Companions, become eloquent and agreeable. This Line of *Horace* is not forgot *.

Fœcundi Calices quem non fecere diſertum:

That in *Thracia* there was a Temple conſecrated to *Bacchus*, the Prieſts of which never pronounced their Oracles, until they had their Bellies well fill'd with that God which they there ador'd——— Here is a great Preparation our Author makes, but to what will it terminate? Why, to a groſs Impiety: "For there-"fore (adds he) the antient Philoſophers hear-"ing the Apoſtles ſpeak in different Languages, "tax'd them with Drunkenneſs; as St. *Luke*

* *Horace*, Epiſt. 5. Book 1.

Quid non Ebrietas deſignat? operta recludit
Spes jubet eſſe ratas, in prælia trudit inermem,
Sollicitis animis onus eximit, addocet artes.
Fœcundi Calices quem non fecere diſertum?

" tells us in the Second Chapter of the *Acts* of " the Apoſtles." But behold his Honeſty. It is probable there was not one Philoſopher amongſt the Crowd of Strangers of which St. *Luke* ſpeaks. They were Men fearing God, who embrac'd Chriſtianity, making a juſt amends to the Apoſtles. And where does he diſcover, (I would feign know) that Wine inſpires us with the Knowledge of Tongues, and makes Men ſpeak ſuch noble things of God, and in ſuch a manner as to attract Admiration? As for me, I confeſs, I have known a great Number of Drunkards, of all ſorts, which yet could ſpeak but their Mother Tongues.

XLVII. As to the Reſurrection of the Dead, and the many Examples ſhewn him of its Poſſibility, he ridicules the one and the other; and not only the Chriſtians, but even the Pagans, who believed that Doctrine, and ſeemingly attacks the latter, with a View to be more ſevere on the former. * " *Lucian* would anſwer us, (ſays " he) That all thoſe little Stories have been " invented by ſome trifling Liars among the " *Greeks*, or hypocritical *Platonicks*, throwing " them as a Miſt before the Eyes —— but " (ſays *Alexander*) *Plato* has maintain'd the Immortality of the Soul againſt many Philoſophers. It is true, (replies the other) but he " has likewiſe held for the Immortality of the " Soul of that little Bird you ſee in that Cage. " Was not *Socrates* (replies *Alexander*) a Man " of great Probity? Yes, ſays *Vanini*, but he " taught that in a Republick, it was neceſſary " the Vulgar ſhould be kept to their Duty by " fabulous Prodigies. *Alex.* Nevertheleſs he " died chearfully, in defence of Truth, deſ-

* Dial. LVII.

" piſing

" piſing the Worſhip of falſe Gods. *Vanini.* " I cannot think that it was out of Zeal to- " wards Religion; but perhaps to avoid the " Contempt which the fear of Death might " have drawn upon him, in an Age when " Strength of Mind and Conſtancy were ſo " much admir'd." Thus it is that unworthy Pedant vilifies an illuſtrious Philoſopher. We ſhall ſee anon, how mindful he is of that excellent Morality, when he is himſelf in Priſon. What (he adds) is yet more worthy the Indignation of all true Friends to *Socrates*, as I eſteem my ſelf, judging of the Diſpoſition of that great Man by his own. He ſays, perhaps the Inquiſitors of the *Areopagus* would not liſten to his Recantation. 'Tis thus he caſts a Slur upon a glorious Life, crown'd with a no leſs heroick Death, altho' he knows 'tis what none of the Antients ever pretended to, and which the *Epicureans*, and other Enemies to him and *Plato*, would never have forbore urging againſt them, had there been the leaſt Shadow of Truth in it.

A falſe Suggeſtion againſt *Socrates.*

Politickly ſpeaking, Atheiſts ſhould not ſtop at ſuch like Conjectures, for if that Method ſhould happen once to be in uſe, 'tis then Chriſtian Philoſophers may ſufficiently annoy them with whole Volleys of Perhaps's, and that ſo effectually, as to blemiſh their moſt ſpecious and innocent Actions: And, in ſhort, to conſider it well, Conjecture for Conjecture, upon whom can they more naturally fall? On Men perſuaded of the Exiſtence of a ſupreme God, Witneſs and Judge of our ſecret Thoughts and Actions, who has in his Power only the Right of Rewarding or puniſhing; or on thoſe who thinking themſelves Independants in Nature, and empower'd to trample under foot Religion oppreſs'd, have ſhaken off the Burthen of a pretended

Imprudence of atheiſtical Conjectures.

tended Governor, and thus qualify'd themſelves to ſatisfy, without the leaſt Remorſe, their favourite Paſſions, tho' perhaps not always thoſe conſpicuous and open, as Gluttony, Drunkenneſs, and Wantonneſs, *&c.* But yet ſuch which are not leſs pernicious and deſtructive to Society, tho' often hidden, as Pride, Malice, Contempt, Anger, Vengeance, and Perfidiouſneſs.

Vanini beeves neither Genius's, Dæmons, nor Oracles.

XLVIII. *Vanini*, after having, in this manner, calumniated *Socrates*, ridicules the good and evil Genius's. He examines the Queſtion concerning Dæmons and Oracles. As to the former, he believes there are no ſuch Beings; and condemns *Plato* for having introduc'd them without Teſtimony. * There are no Reaſons (ſays he) to convince us that there are either good or evil Genius's, either beyond, or on this ſide the Moon; it is mere human Fancy hath invented them. But ſays *Alexander*, there are Magicians, and Necromancers, that bewitch People. *Il credere é di corteſia*, to believe that is only out of good manners, anſwers *Vanini*. But that they perform any thing by "the Mediation of Devils, I cannot think, "ſince I believe the Exiſtence of Devils but by "the Perſuaſions of Religion: But I had rather aſcribe thoſe Effects to natural Cauſes." *Alexander*, not yet ſatisfied, asks how the *Egyptian* Magicians wrought ſo many Prodigies before *Pharao*: But this Difficulty does not puzzle our *Vanini*. "Thoſe Philoſophers (ſays he) "which deny the Exiſtence of Dæmons, deſpiſe "the *Hebrew* Annals. *Cardanus*, nevertheleſs, "tells us, it is very probable that thoſe Impoſtors, by the vehement Strength of their "deſiring Frogs, brought the Taſte of them into

* Dial. 480.

"their

" their Mouths, and that the Spittle thereof pro-
" duc'd thoſe Creatures. For, adds that pro-
" found Naturaliſt, as we find that in Summer,
" from a Drop of Water, is brought forth a
" Frog, why, in like manner, may they not
" come forth from the Spittle; ſo much the ra-
" ther, ſince it is aſſiſted with the Powers of the
" Soul." I aſſure you, Sir, that *Vanini*'s Book is full of ſuch wretched Nonſenſe, and it is ſuch Traſh, we dearly buy and ſtudy: The ſame time we neglect the Reading and Meditation of Numbers of much more excellent Things.

Opinions concerning the Pagan Oracles.

Our Atheiſt is more reaſonable in ſpeaking of the heatheniſh Oracles: Firſt he applies them to the Devils, then he attributes them to Vapours of the Earth, after that to the Concurrence of the Stars; and laſtly, after having reaſon'd thus at random, he falls in with the Opinion of the late Mr. *Vandale*, who imagin'd them nothing elſe than the Effects of Illuſion and Impoſture. You know, Sir, this Opinion is not new. The *Epicureans* conſtantly ridicul'd them. *Chryſippus* * compil'd a large Volume of them; but *Cicero* divided all their pretended divine Anſwers into four Claſſes, as he tells us, towards the End of his Second Book of *Divination.*

That of *Chryſippus.*

That of *Cicero.*

" But now I come unto thee,

" *Divine* Apollo, *who didſt dwell on Earth below,*
" *To cauſe the fatal Voice of Prieſteſſes to flow.*

" for *Chryſippus* hath fill'd a large Volume con-
" cerning your Oracles, ſome, as I believe,
" falſe, and others fortuitouſly become true, as
" it often happens in common Portents, the

* *Cicero* de Divinat. *Lib.* 2. *Ch.* 56.

others

" others ſo confus'd and obſcure, that the In-
" terpretation doth want another Interpreter to
" unfold, and even the Chance itſelf another
" Chance; and again, others ſo ambiguous,
" that we ſhould refer them to an able Logici-
" an to underſtand them. As that ſet forth to
" one of the moſt opulent Kings of *Aſia*.

Crœſus *croſſing the* Halys, *ſhall overthrow a mighty Power.*

He thought indeed, he ſhould overthrow the Power of his Enemies, but he was overthrown himſelf. *Cicero* mentions many others, which muſt have ruin'd the Credit of *Apollo*. *Lucian*, who has wrote ſince, laugh'd at the whole Paganiſh Syſtem of Religion, not excepting even their Oracles. The Primitive Chriſtians, tho' ſufficiently knowing in the Arguments of *Cicero* and *Epicurus*, without greater Inquiry into the Riſe and Origin of thoſe Foretellers of Fate, choſe rather to attribute them to the Power of the Devil, than to the Impoſition of the Prieſts, becauſe, by ſo doing, they had a better Opportunity of exalting the Power of Chriſt and his Goſpel, which, maugre the Devil and his Superſtition, eſtabliſh'd itſelf over all his Empire. *Vanini*, who rejected the Goſpel, holds the Opinions of *Epicurus* and *Lucian*, and treats the others as Cheats and Illuſions. Father *Tomaſſin*, who perfectly underſtood antient heatheniſh Antiquity, thought that the true Religion would ſuffer no great Loſs, by allowing that thoſe pretended divine Oracles were nothing elſe than Impoſture; this he tells us plainly, in *his Method of ſtudying the Poets in a Chriſtian manner* *. Mr. *Vandale*, Phyſician at *Harlem*,

That of *Lucian*.

The Primitive Chriſtians.

Vanini.

Of Father *Tomaſſin*.

M. *Vandale*.

* See his Words in *Chap.* 1. *Book* 2. of that Treatiſe, and which Mr. *De Fontenelle* quotes in the Preface to his *Hiſt. des Oracles*.

and

and an Anabaptiſt, was the firſt among the Moderns who dar'd break the Ice, and by a deſign'd Treatiſe, deprive the Devil of the Credit of thoſe Oracles he had, during Chriſtianity, ſo long enjoy'd. You may find an Abſtract of his Book, in the Firſt Volume of *Nouvelles de la Rep. des Lettres*, wrote by Mr. *Bayle*. Mr. *Fontenelle*, found it ſo well ſtored with Erudition and good Reaſoning, that he has not thought it unworthy of illuſtrating and beautifying it in the *French* Tongue, as may be ſeen in his *Hiſt. des Oracles*, which has now been publiſhed above twenty eight Years, and which affords that Satisfaction in Reading, that a Perſon, even of a contrary Opinion, muſt be pleaſed with it. One would have thought that after ſo long and univerſal an Approbation of that excellent Treatiſe, it was attacking the common Sentiments of all Men, and expoſing himſelf to an undoubted defeat in pretending to find fault with it. Notwithſtanding Father *Baltus* a Jeſuit of *Strasbourg* did not mind its eſtabliſhed Reputation, but being full of the Writings of the *Fathers*, he could not ſuffer the leaſt Attempt ſhould be made to combat Opinions, which they ſo clearly embraced, and which appears in them as the chief Glory of the Chriſtian Faith: He has therefore dedicated to Mr. *de Fontenelle* himſelf, a reply to his *Hiſt. des Oracles*, in which he gravely and ſeriouſly endeavours to refute him, placing him at variance with all the Chriſtian Antiquity, and even his own Church, which hath adopted from thence what Notions ſhe thought convenient. Mr. *de Fontenelle*, then imployed with his *Hiſtoire de l'Academie Royale*, did not think fit to interrupt the ſtudy of Nature, and the annals of his Academy, to examine

the reaſoning and quotation of the Jeſuit; and which would have brought him again in a Path he had forſaken on account of its Cragginess. Upon which a Friend of *Le Clerc*'s undertook his Defence in the thirteenth Volume of his *Bibliotheque choiſie*, without yet adopting every one of our Academick's Notions. Father *Baltus* anſwers this anonymous Author by *a Defence of his former Reply*, which is not leſs learned than the Reply itſelf; but which Mr. *Le Clerc* has not found more perſuaſive. The Controverſy thus ſtopped, and Mr. *de Fontenelle* thought it ſufficient to return his Apologiſt thanks, in a Letter to Mr. *Le Clerc*, wrote about four or five Years ſince; and in which I have been informed were theſe Words: *If Father* Baltus (ſays he) *will believe the Veracity of the Pagan Oracles he is at Liberty: As for me I have turned my Studies another way.* I imagine Sir, ſuch a ſhort Hiſtory of this Subject might be acceptable to you on account of the great concern you take in the Republick of Letters. I now reſume the Thread of my Diſcourſe, and return to *Vanini*'s Impieties, on which I have a few Words more to offer.

XLIX. Upon the duration of Religions he is altogether extravagant; he has again recourſe to the wild fancies of *Aſtrologers* *. He ſays, "That the Stars after many Years approaching one another form Conſtellations, "which have a wonderful influence on ſublunary Things, and produce extraordinary "Effects; Mens Wills alter; their Imaginations grow warm and their Underſtandings "diſordered. Whence happens that a skillful "Man, greedy of divine Honours, foreſeeing

* Dial. lii.

"the

" the Event, declares himſelf a Prophet ſent " from *God*, and arrogates to himſelf many " Wonders, which are the bare reſult of the " Conjunction of the Stars; and thus the Vul- " gar being deluded, admire and adore him. " And thoſe natural Effects they give the " Name of Miracles, although in fact, they " do not ſurpaſs the power of Nature. Now " therefore (ſays he) I can anſwer to the " Queſtion, for Oracles have ceaſed becauſe " they once begun; and according to my fore- " going Suppoſitions, whatever beginneth " muſt end: Now it cannot end, if there do " not happen contrary Diſpoſitions; ſo after " Oracles the Law, their oppoſite, is come, and " Oracles will again flouriſh among our later " Succeſſors". It is juſt the ſame Syſtem we have mentioned above, and which reminds me of a Converſation I had about ten Years ago with Mr. *Bayle*. I deſired him he would inform me, which he thought the moſt formidable Objections that had been urged againſt the Chriſtian Religion, becauſe I was willing to be ſufficiently provided before-hand againſt whatever might put a ſtop to the Faith of a *Philoſophical Mind*. The reply of that learned Man, was much the ſame with what is here above recited. He told me, that many famous and learned Phyſicians, who had ſtudied all their Lives Aſtronomy, after ſo long and cloſe a Meditation, had concluded, that there happened in the World, from time to time, very extraordinary and (according to their Principles) neceſſary Revolutions, which rendered Men more ſuſceptible of Religion at one time than another. I found ſome Years after in reading *Cardanus* and *Vanini*, whence that famous Critick had taken that Objection; and

which otherwiſe he did not ſeem to value much. I am perſuaded, that in the main *Vanini* did not lay great ſtreſs upon it. But it is natural for Unbelievers to make an advantage of any thing. They borrow from all Syſtems, whatever may make their Cauſe appear ſpecious, though even in their Souls they ridicule thoſe very Syſtems, and on other Occaſions utterly explode them. We have already ſeen how *Vanini* laughs *in his Dialogues*, at thoſe Principles he has laid down in his *Amphitheatre*. *Celſus* the *Epicurean*, became a *Platonick*, when he attacked Chriſtianity: Our Atheiſt doth the ſame, when he reviles the Apoſtles, or attempts to refute their Diſciples. *Spinoſa* loved to paſs for a *Carteſian*: His followers make uſe of the ſame Veil in order to deſtroy *Freedom*, and introduce a ſtoical Fatality. *Leenhoff*, formerly Miniſter at *Luvole*, and now depoſed, made uſe of it likewiſe in his *Paradiſe on Earth*. I take heed of putting Mr. *Bayle* in the Liſt of thoſe Gentlemen, although the ſame variation hath happened to him ſometimes. When he attacked the literal Senſe of thoſe Words of the Goſpel, *oblige them to come in*, he laid down for Principle the firſt axioms of natural Reaſon, and thence gave the Inquiſitors deadly blows, but afterwards having in view other Enemies, he declared for *Pyrrhoniſm*, againſt the certainty of Reaſon, and undertook to ſilence her Preſumptuouſneſs, by a ſimple Dialepſis of the Scepticks. In another place he makes uſe of Arguments drawn from both Philoſophy and Religion in favour of Liberty, againſt Mr. *Saurin*. But again, he denies that liberty and diſguiſes it in agreeable Imagination deſtitute of Reality. And if it be objected to him, that Atheiſm deſtroys all Vir-

Atheiſts make a hand'e of ony thing, and by that contrad & themſelves

tue

me, not only in making every thing material, but alſo fatal and neceſſary; What doth he do? He retires under the Protection of the Synod of *Dortrecht*, and there having fixed himſelf, he dares the Attacks of the Orthodox. "If "any one (ſays he to his Proteſtant Calvi-"niſt) ſhould object, that neither your Words "nor Actions were congruous to the principle "of abſolute Predeſtination and irreſiſtible "Neceſſity which moves the Will, what "would you anſwer him Sir? With good "Arguments; but which might many of them "ſerve the turn of a *Spinoſiſte*, if you did re-"proach him that the care he takes of his "Perſon, Family and Wealth, was not agree-"able to his Syſtem.

L. "Time (ſays our Atheiſt) as to that "motion which the eternal Mover will never "ceaſe to impreſs on the World, is Eternal: "So that whatever has ended by the Courſe "of the Celeſtial Motions, will certainly ap-"pear again, by a periodical Return, not in "the ſame Inviduals, as *Plato* hath dreamed, "but only in the ſame Specie. This is (adds "he, after advancing perfect Materialiſm) the "Rudiments of our ſubtile Philoſophy, which "bring forth all thoſe Wonders; but in com-"plaiſance to the Chriſtian Faith, I utterly "deteſt, and I have tacitly condemned them "before I propoſed them as the ſubject of "Converſation".

LI. The Concluſion is anſwerable to the other parts of the Book; he complains of the uncertainty and vanity of Arts, and *Alexander* endeavours in vain to comfort him with the Thoughts of the Glory he had obtained in ſuch youthful Years. And what have I more of it than that, ſays *Vanini?* But after all, he com-

forts

forts himſelf likewiſe, though in ſuch a profane manner, that his inward Sentiments are eaſily perceived. " If my Soul (ſays he) ſhall
He Jeſts with Reputation. " periſh with my Body, as the Atheiſts think, " what pleaſure can ariſe to it from Fame? " Perhaps with the fine Names of Glory and " Reputation, it may be carried with leſs " trouble to the Grave. If on the contrary, " as we hope and willingly believe my Soul " ſhall not periſh, but will fly to ſome upper
Of heaven " Region, it will there enjoy ſuch raviſhing " and agreeable Pleaſures, that it will eſteem " as nothing, the ſplendid and illuſtrious pomp
Of Purgatory. " and glory of the World. If it deſcends to " the flames of Purgatory, thoſe Prayers *Dies* " *Iræ*, *dies illa*, ſo pleaſing to weak Women, " will be much more welcome to it, than the
Of Hell. " moſt florid Rhetorick of *Tully*, or the moſt " ſubtile Arguments of *Ariſtotle*; or if (which " *God* forbid) it ſhould be delivered to the " flames of the dark *Tartarus*, no comfort or " pleaſure, no deliverance can ever happen". *Alexander*, dazled with ſuch Thoughts, is angry with himſelf he had them not inculcated in him from his tender Infancy. Would to *God* (ſays he) that from my Youth I had ſet out with theſe Principles! *Julius* anſwers him with this fine Reflection. *Think not* (ſays he) *on paſt Evils, take no heed of future ones and ſhun thoſe preſent.* *Alexander* nevertheleſs Sighs for the loſs of his youthful Age. Upon which *Julius* asking him the Reaſon, he anſwers, *It is becauſe* (ſays he) *I remembered that beautiful Paſſage in* Amintas.

Perduto é tutto il Tempo
Che in amar non ſi ſpende.

an

an excellent Concluſion for a Prieſt and Philoſopher, who preſently after adds, that he ſubmits all his Thoughts to the Judgment of the Pope and the Church.

LII. I leave you to imagine Sir, what the Converſation might be of one, who filled his Books with ſo much Epicurianiſm, and that of the moſt groſs ſort. It appears by the Evidence of ſeveral Authors, that he was not accuſed at *Thoulouſe*, for his Writings, although perhaps they helped to determine his Judgment; which ſhews us his Converſation muſt have been rather worſe than they, ſince it was that which really occaſioned his Ruin. Here follows what *Gramond* tells us concerning him, al- " moſt at the ſame time, by order of Parliament, " was condemned to die, at *Thoulouſe*, *Lucilio* " *Vanini*, who was eſteemed an arch Heretick " by ſeveral; but whom I always looked upon " as an Atheiſt; for I think a Man that de- " nies the exiſtence of *God*, deſerves the latter " rather than the former Title. This wretch- " ed Fellow pretended to be a Phyſician, but " in reality was no other than a Deceiver of " Youth, who generally are imprudent and in- " conſiderate. He laughed at whatever was " ſacred or religious: He abominated the In- " carnation of *Chriſt*, and denied the Being of " *God*, eſteeming all Things to be made by " Chance: He adored Nature as a fruitful " Mother and firſt Cauſe of all Beings, which " was his greateſt Error, and whence all the o- " thers derived, and which he had the bold- " neſs ſtubbornly to teach in a place ſo holy " as *Thoulouſe*. He preſently had a great Num- " ber of Followers, amongſt thoſe that juſt " came from the Univerſities, and who being " in their youthful Years, were more ſuſcep- " tible

tible of new Opinions. Having been born in *Italy*, he begun his Studies at *Rome*, and applied himſelf with Succeſs to thoſe particular Branches, *Philoſophy* and *Divinity*; but falling in Impiety and a deſpiſing of Holy Things, he blemiſhed his religious Character by an infamous Book, intituled, *Of the Secrets of Nature*; in which he had the impudence to aſſert, that Nature was the Goddeſs of the Univerſe. Having retired into *France* on account of a Crime, of which he had been accuſed in *Italy*, he came at laſt to *Thoulouſe*. There is not a Town in *France* where the Laws are framed with greater ſeverity againſt Hereſy, and although the *Edict of Nants* hath granted to the Calviniſts, an open Liberty of Trade between them and us, nevertheleſs thoſe *Sectaries* have not dared to truſt themſelves in this Place, which is the Reaſon it is the only one in all *France* free from this Peſtilential Hereſy. No Perſon is admitted a Citizen, whoſe Faith is the leaſt ſuſpected by the *Holy See*. *Vanini* concealed himſelf for ſome time, until Vain-Glory induced him to treat ſome Myſteries of the Catholick Church Problematically, and afterwards he derided them openly: The young Men were at firſt ſtruck with great Admiration, being weak enough generally to eſteem thoſe Things which have but few Approvers. They valued whatever he ſaid; they imitated and followed him. Being accuſed of corrupting the Youth, he was caſt into Priſon. He behaved at firſt as a Catholick, and feigned to be Orthodox; which put back the Puniſhment he deſerved. He was even juſt a going to be ſet at Liberty on account of the ambiguity of the

First hidden at *Toulouſe*.

Afterward profane, and admired, and followed by the young Men.

Hypocrite.

Proofs

" Proofs againſt him. When *Franconi*, a Man
" of Fortune, and great Merit, as this one
" Circumſtance ſufficiently teſtifies, depos'd,
" That *Vanini* had often denied, in his Pre-
" ſence, the Exiſtence of God, and ſcoff'd at
" the Myſteries of the Chriſtian Religion, they
" brought together the Accus'd and the Accu-
" ſer; and this latter maintain'd what he had
" advanc'd. *Vanini* was brought before the Se-
" nate, and being ſeated on the Stool, was
" asked, What were his Thoughts concerning
" the Exiſtence of God?" He anſwer'd, *That, with the Church, he ador'd a God in Three Perſons; and thus Nature evidently demonſtrated the Being of a Deity.* " And having perceiv'd, by chance,
" a Straw on the Ground, he took it up, and
" ſtretching forth his hand with it, he ſpoke to
" his Judges as follows. *This Straw obliges me*
" *to confeſs there is a God* —— and having end-
" ed his Diſcourſe about a Providence, he ad-
" ded, *this Grain being caſt in the Earth, appears,*
" *at firſt, to be deſtroy'd, and whitens; then it be-*
" *comes green, and ſhoots forth, out of the Earth,*
" *inſenſibly growing: The Dew aſſiſts its ſpringing*
" *up, and Rain gives it yet a greater Strength:*
" *It is furniſh'd with Ears, of which the Points*
" *keep off the Birds. The Stalk riſes, and is co-*
" *ver'd with Leaves; it becomes yellow, and riſes*
" *higher: A little after it withers until it dies:*
" *It is Thraſh'd; and the Straw being ſeparated*
" *from the Corn, this latter ſerves for the Nouriſh-*
" *ment of Men, and the former is given to Ani-*
" *mals, created for Mens Uſe.* He concluded
" from all this, that God was the Author of
" all Things. For to anſwer an Objection,
" which might be made, *That Nature was the*
" *Cauſe of theſe Productions*, he took again his
" *Grain of Corn*, and returning to his Author,

A feign'd Confeſſion of *Vanini*'s concerning Religion.

" ſon'd thus. *If Nature hath produc'd this*
" *Grain, who hath produced that Grain which pre-*
" *ceded this? If that be alſo produc'd by Na-*
" *ture, let us conſider its Foregoer, and thus go to*
" *the very firſt, which muſt neceſſarily have been*
" *created, ſince there can be imagin'd no other Cauſe*
" *of its Production.* He very amply prov'd after-
" wards, that Nature was incapable of crea-
" ting any thing; whence he concluded, that
" God was the Creator, and Author of all Be-
" ings. But all this he ſaid through Vanity or
" Fear, rather than an inward Conviction.
ound " Notwithſtanding, as the Proofs againſt him
uilty, and " were convincing, he was, by Arreſt of Par-
ondemn'd " liament, condemn'd to die, after they had
s an Infi- " paſs'd a whole Six Months in preparing things
el. " for a Hearing. I ſaw him in the Dung-Cart,
" when he was carried to Execution, making Sport
" of a Fryar, who was allow'd him, in order
" to comfort and reclaim him from his Obſti-
" nacy. Such a momentaneous Aſſiſtance is of
" little uſe to a deſperate Man. It would be
" better to allow thoſe Criminals, condemn'd
" to die, a ſufficient Interval, to the end, that
" they might have time to know themſelves,
" and repent, after having thrown forth all
" their Rage and Indignation. In *France* they
" at once declare Sentence of Death to a Cri-
" minal; and amidſt the Horror, which the
" Dread of the Execution cauſes, they carry
" him to it. In *Spain*, and all the reſt of *Eu-*
" *rope*, their Method is much preferable. They
" allow Criminals time ſufficient to appeaſe the
" Horrors of Death, and expiate their Crimes
" by Penitence and Confeſſion. *Vanini*, wild
" and obſtinate, refus'd the Conſolation of the
" Fryar accompanying him, and inſulted even
" our *Saviour*, in theſe Words. He ſweated with
" Weak-

" *Weakneſs and Fear* (ſaid he) *in going to ſuffer*
" *Death, and I die undaunted.* This Villain had
" no reaſon to ſay he died fearleſs. I beheld
" him intirely dejected, and making a very ill
" uſe of that Philoſophy he ſo much boaſted
" of. Being ready to be executed, he had
" an horrible and moſt wild Aſpect. His
" Mind uneaſy, and teſtifying, in all his Words,
" great Anxiety, altho' from time to time
" he cried out, he died a Philoſopher: But,
" that he departed rather like a Brute, cannot
" be denied. Before they ſet Fire to the
" Wood-Pile, he was order'd to put his Tongue
" out to be cut off, which he refus'd to do;
" Nor could the Hangman take hold of it but
" with Pincers, in order to perform the Execu-
" tion. There was never heard a more dread-
" ful Screech than he then gave; you would
" have taken it for the Bellowing of an Ox;
" the reſt of his Body was conſumed by Fire,
" and his Aſhes thrown into the Air. Such
" was the End of *Lucilio Vanini* (continues the
" Hiſtorian) that beaſtly Scream he gave before
" his Death, is a Proof of his ſmall ſhare of
" Conſtancy. I ſaw him in Priſon, I ſaw him
" at the Gallows, and likewiſe knew him be-
" fore his being arreſted. Given up to his Paſ-
" ſions, he wallowed in Voluptuouſneſs, in
" Priſon he was a Catholick; he went to Exe-
" cution deſtitute of Philoſophy, and at laſt
" ended his Life raving mad. When living, he
" ſearch'd very much into the Secrets of Na-
" ture, and rather profeſs'd Phyſick than Di-
" vinity, tho' he lov'd the Title of Divine.
" When they ſeiz'd his Goods, there was found
" a great Toad alive, ſhut up in a large Cry-
" ſtal Bottle, full of Water: Upon which, he
" was accus'd of Witchcraft; but he anſwer'd,

Dejected and ill, feigning the Philoſopher.

Obſtinate, refuſing to put out his Tongue, which they do by Force.

Voluptuous, and a Libertine.

" that that Animal being conſum'd by Fire,
" was a ſure Antidote againſt all mortal and
" peſtilential Diſeaſes. He often went to the
" Sacraments during his Impriſonment, and
" cunningly diſſembled his inward Sentiments:
" But when he found there was no hopes of
" eſcaping, he diſclos'd them, and died as he
" had liv'd."

In Priſon, a Hypocrite and Bigot.

LIII. This is all that *Gramond* ſays concerning him, the *French Mercury* ſpeaks more in behalf of his Conſtancy; but the Author knew but little of his Behaviour, when in Confinement. And there certainly is a conſiderable Difference to be made, as to the Truth of a Fact, related by one who has it but by hearſay, and him who was actually an Eye-Witneſs, as in this Caſe, the latter living at *Paris*, and the other upon the Place. Nevertheleſs they in the main agree, as to the Cauſe of his Accuſation; and in comparing their Relations, we diſcover the juſt Time of his Impriſonment and Execution. " In the Month of *November*, of the laſt " Year * (ſays the *Mercury*) was taken Priſoner, " in the Town of *Tholouſe*, an *Italian*, a Philoſo- " pher, very learned, who went about in Fa- " milies, teaching Children that were deſirous " to underſtand Philoſophy perfectly. He main- " tain'd, and taught, that our Bodies are with- " out Souls, and that being dead, our Being " was deſtroy'd like unto Brutes: That the " Bleſſed Virgin (O execrable Blaſphemy!) had " had a carnal Knowledge as other Women; " and other Words yet more ſcandalous, alto- " gether unworthy to be related or wrote. By " his Eloquence, he ſubtily inſtilled his pernicious " Opinions in the Minds of his private Audi-

The *French Mercury* adds other Circumſtances.

His Impriſonment *Nov.* 1618.

His Employment at *Tholouſe*.

His Impieties.

* *Merc. fran.* Tom. V. p. 63, 64. *Ann.* 1619.

tors,

" tors, inſomuch that they began to give ear
" to the Belief of that falſe Doctrine. But it
" coming to the Knowledge of the Parliament,
" they publiſhed a Decree againſt this new Mi-
" niſter: And he being apprehended, and que-
" ſtion'd, maintain'd his Inſtructions were
" Truths: Upon which he was condemn'd, and
" his Sentence declar'd, importing, that he His Sen-
" ſhould make an honourary Amends in his tence.
" Shirt, a Torch in his Hand, and drawn upon
" a Hurdle to the Place of Execution; where
" his Tongue being cut out, he ſhould be
" burn'd alive: All which was effected in the
" beginning of *February*, † in the Place call'd
" *la place du ſalin.* He died as freely, and with His ſup-
" as much Conſtancy and Patience as ever Man pos'd Un-
" did. For coming out of the Priſon, he joy- daunted-
" fully and briskly uttered theſe Words, In neſs and Conſtanc
" *Italian: Let us go and die chearfully as a Philo-*
" *ſopher.* But moreover, to ſhew his Undaunt-
" edneſs in dying, and the Deſpair of his Soul,
" when he was told to call out to God for Mer-
" cy, he ſpoke theſe Words in the Preſence of
" a thouſand Spectators: *There is neither God* His laſt
" *nor Devil, for was there a God, I would intreat* Words.
" *him to conſume the Parliament with his Thunder,*
" *as being altogether unjuſt and wicked; and was*
" *there a Devil, I would alſo pray to him to ſwal-*
" *low it up in ſome ſubterraneous Place.* But ſince
" there is neither the one nor the other, I can-
" not do it."

Mr. *la Croſe* doth not rely upon the Authority of the *Mercury*, and I think him in the right, the Relation of the Preſidents having

† How could *Vanini* have been kept four Months in Priſon, if he had preſently confeſs'd his Crime, as the *Mercury* pretends.

a greater

a greater Appearance of Truth. I likewiſe am of Opinion, there is no great Credit to be given to this Circumſtance I have already related, which is, That *Vanini*, before he was tied to the Stake, confeſs'd to all the Members of Parliament, that at *Naples*, he, with thirteen others of his Comrades, ſet out for all Parts of *Europe*, to ſpread the Doctrine of Atheiſm; and that *France* was allotted him. *Gramond* makes no mention of it, and it is not at all probable he ſhould have forgotten ſuch a particular Circumſtance, after having related many, much more inſignificant.

Vanini's Character, drawn from his Writings and Actions.

LIV. After having given you the moſt certain Circumſtances of the Life and Death of our Unbeliever, I muſt now, Sir, endeavour to give you likewiſe an Idea of his Character, taken, not only, from what I have ſaid, but other Parts of his Writings.

His Body. He was of a healthful Conſtitution, tho' not robuſt, and of a mild Aſpect; he was compenſated ſufficiently for the weakneſs of his Com-

His Mind. plexion (if he may be believ'd) by the Qualifications of the Mind. He had (he tells us) a great and ſublime Underſtanding, agreeable, and of delightful Vivacity in Converſation. It is certain that he lov'd Study, and made a very con-

His Latin. ſiderable Progreſs in a few Years. His *Latin* is for the moſt part pure, but often times ſwell'd, and not natural; which proceeds from an ill directed Imitation of the *Roman Orator*. We imagine commonly to have got into his Style, if we can imitate that in thoſe eloquent Pieces which he pronounced in the Senate: But we do not take notice that this great Man thus exalted it, ſuitably to the Perſons for whom it was intended, and that he was no leſs ingenious in the Simple and Diadactick, than in the

Sublime.

Sublime and Oratorial. Read his *familiar Letters*, his *Offices*, and his *Tuſculanes*; his Books of the *Nature of the Gods*, but amongſt the reſt, all the laſt of *Divination*, and you will agree with me, nothing can be found more ſimple and preciſe. But *Vanini* had ſtudied abundantly more *Cardanus* and *Averroes*, confus'd and hard Writers, than *Pliny* jun. *Quintilian*, or *Cicero*. Prejudic'd in favour of *Ariſtotle* and his Followers, he could reliſh no other than the Philoſophy firſt taught him in his own Country, but had Underſtanding enough to perceive the weakneſs of that of *Thomas Aquinas*, and the Schoolmen: His native Religion, and the manner it is us'd, both by the People and Clergy, did not prepoſſeſs him in favour of that of *Jeſus Chriſt*. He thought thoſe Grimaces and Artifices, as alſo the Cupidity he then beheld, were from the beginning eſſential to the Chriſtian Religion. Being out of conceit with the Goſpel which was not ſuited to his Ambition, he form'd the monſtrous Deſign to combat it where ever he could with Safety; and the more effectually to perform that, he eſteem'd the ſhorteſt Method was to declare againſt all Religions, not excepting even that of Nature. Swell'd with the boldneſs of the Undertaking, this ſecond *Epicurus* overun the World to wage War with the Deity. And if we may believe Report, he perſuaded thirteen of his Comrades to do the like alſo. From this one Paſſage of his Life one may judge of his Prudence and Wiſdom. He drew upon himſelf a World of Enemies, equally great and powerful, both by their Authority and Characters. Alarms and Uneaſineſs follow'd him every where, and threw him ſometimes in Diſorders, which attack'd even his Inteſtines. *Mihi*

His Philoſophy.

His Irreligion.

His *Epicurean* and infamous Project.

hi (ſays he) *præterita pericula & timores memoria repenti alvus ſolvitur.* Diſtruſt never left him, and got before him wherever he went. In vain it was he took the Stick and Bag of *Diogenes*: Povery, which would have been valuable in a true Philoſopher, in him became an eternal Scandal, by his ſpunging and flattering ways. His Hypocriſy, which was ſo well manag'd in his *Amphitheatre*, unmask'd itſelf in his *Dialogues*; and made appear a Stock of Ambition and Impiety, which were but too much confirm'd by his Deportment. Without Shame or Modeſty, he repreſents his Father having the Conſtancy of an Emperor, his Mother the Blood of the true *Spaniſh* Nobility, and himſelf the Sentiments of a *Socrates*. But I miſtake, he exalted himſelf a Degree higher. God forbid (ſays he ſomewhere) that *Vanini* ſhould be reproach'd with the leaſt Diſſimulation: And notwithſtanding he attributes to *Socrates* a Puſilanimity, which muſt have for ever defam'd him, as when he tells us, that the *Areopagus* would not give ear to his Recantation *: Would he not have done better to have ſtrip'd himſelf of his pretended Courage, and have given it to *Socrates*, as juſtly due? Swell'd with Pride, no Name, but that of *Julius Cæſar*, was worthy of him: And as if the leaſt Remnant of Chriſtianity was burthenſome to him, he denied that given him in Baptiſm. From the firſt Page of his *Dialogues*, having ſuffer'd himſelf to be ſufficiently praiſed, both in *Greek* and *Latin*, he introduces his Interlocutor, ſaying, Good God! What a Loſs it is for thoſe who are depriv'd of your Converſation! *Bone Deus! quantum jacturæ fit ab iis qui te non audiunt!* Who can diſ-

His Poverty.

His Hypocriſy.

His Immodeſty.

His monſtrous Pride

* See above, Chap. XLVII.

pute

pute you the Honour of having contributed to the Improvement of Sciences! *Eja vir abſque controverſia de quacumque Scientia optimè merite* * ! "I will not do (ſays *Alexander* again) as *Thomas Morus*, who hearing *Eraſmus* diſpute, "whom he did not know perſonally, ſaid to "him, You are a Devil, or *Eraſmus*: But I "ſhall thus ſpeak of your Wiſdom, Either you "are a God, or *Vanini*." I am *Vanini*, replies *Julius Cæſar*: † All his Dialogues are interſperſed with ſuch like Modeſty. In one he diſputes with *Solomon*, *Julius* and *Alexander*, leaving the Stage to *Solomon* and *Vanini*. This latter ſcurrilouſly treating the former, as a bad Naturaliſt, and the moſt inſipid of Moraliſts; whilſt in return, the other praiſes him as the God of true Philoſophy, *Vale Philoſophorum Deus!* That is the Concluſion of the Dialogue. ‡ His whole Works, tho' but Plagiariſm, yet he would have 'em thought Originals; altho' he knew *Cardanus*, *Pomponatius*, *Fracaſter*, and *Scaliger* might claim whatever they contain; excepting his Profanations. We have related a ſufficient Number to judge of the Author. But there remain yet ſome of ſuch Nature, which forbids their citing, becauſe they depend upon manifeſt Alluſions to holy Words, which we venerate, and he did not. Being as bad a Critick as Philoſopher, he explains Scripture as one that had never ſtudied it. He thinks that St. *Mark*, in ſaying (*Chap.* vi. *Ver.* 5. of his Goſpel) that our Saviour could not work a Miracle in *Nazareth*, gives to underſtand, his Power was only Relative **; that is to ſay, fallacious, fitting to dazle the Underſtandings of the

His Impiety concerning *Solomon*.

His Plagiariſm.

His Profanations.

His wretched Criticiſm

* Dial. I. † See Dial. LIV. ‡ It is Dial. XVI.
** Dial. p. 439.

Vulgar, in a place where he was not known; but intirely uſeleſs in his own Country, where they knew what he was. Behold the Noble Deſign he attributes to an Evangeliſt! Notwithſtanding that, it is that very Evangeliſt which demonſtrates, throughout his Goſpel, that Jeſus Chriſt is the Meſſiah, and the Son of God; and that his Miracles are from Heaven: That if he wrought few in *Nazareth*, it was becauſe of their Unbelief, which, as it were, hinder'd him, altho' he heal'd ſome Sick, as it is obſerv'd in that Verſe quoted by our Atheiſt. Infatuated with Aſtrology, he is ſilly whenever he copies *Cardanus* and *Agrippa*, and adds the fooliſh Stories from his own Country. And what is the more particular in relation to that, is, that after he has calculated the Nativity of our Saviour Jeſus Chriſt, he would alſo do his own, and found it to be very unhappy. "You have "taught us (ſays he to *Cardanus*, in the 25th "Page of his *Amphitheatre*) that our Actions "depend upon the Motion of the Cæleſtial Bo"dies: And how do you then maintain they "are not fram'd for us? Truly if thoſe Conſtel"lations are not made for us, I would not then "fear *Mars*, which in the Orb preſided at my "Birth." * Now *Mars* is a Planet which foretells Wars, Sufferings, and Tragick Deaths; How then can we, after this, doubt of the Veracity of Aſtrology? Having no Principles of Religion, not even of the Religion of Nature; ſince he thought the World was eternal, and guided only by blind Neceſſity, we muſt not be ſurprized if his Morals were not perfectly good. I deteſt vain Accuſations; and in relation to the Dead, I would have the moſt ſtrict Equity obſerv'd: But the poſitive Aſſertions of

His Infatuation for Aſtrology.

He calculates his own Nativity.

His Morals bad.

* *Amphit.* p. 25.

Father

Father *Merſenne*, on the Conduct of *Vanini* in the Monaſtry, gives room for a ſtrong Suſpicion. Add to that the Teſtimony of *Preſident Gramond*, who was in the ſame Place, and declares to have known him exceeding voluptuous, ſtrengthens that Suſpicion: And in ſhort, his Dialogues, ſo full of Obſcenity and profane Turns, renders it highly probable. He ſpeaks of one of his Miſtreſſes, named *Iſabella*, which he ſtil'd his *little Left Eye*, and for whom he compos'd amorous Songs. This is a fine Confeſſion for a Prieſt, in a Book of Religion and Philoſophy! He is delighted when he ſpeaks of Generation, doing it in ſuch licentious Terms, that it is eaſily perceivable, his Heart is not very clean, ſince his Imagination is ſo polluted. He goes yet farther, and ſeems to approve Debauchery; for when he ſpeaks about *Ariſtotle*, who receiv'd ſuch conſiderable Sums from *Alexander*, for the Study of Animals, our *Alexander* confeſſes to his *Julius*, that as for him, he had expended his whole Eſtate in keeping a little Animal (he means a *Courtiſana*). * *Julius* gives his Approbation, ſaying, That many will think he has embrac'd the beſt Choice. Is it then at all ſurpriſing Providence cut off this young Madman in the beginning of his Courſe?

His wanton Stile.

Mr. *de la Croſe* charitably believes, that his Impriſonment wrought a Repentance, and that he ſpoke to his Judges no leſs ſincerely than orthodoxly, when he made uſe of the common Inferences to demonſtrate the Exiſtence of God, in ſhewing the Straw. I would not condemn a Judgment ſo charitable; and I am of his Opinion, that when things are doubtful, it is beſt to incline to the leaſt diſadvantageous ſide: But really I don't know whether this Rule can

Opinion of Mr. *la Croſe* upon *Vanini*'s retracting.

Very charitable.

* *Dial.* p. 298.

be applied to a Man who lived and died as *Vanini*. I would obſerve again, that it did not become our *Italian* to banter *Socrates* upon his Impriſonment, and to behave ſo ill in his; it is thus the Reproaches he makes to others fall on himſelf. He ſung a Recantation, but it was not thought ſincere enough to be heeded. We ſay alſo, that the Parliament of *Tholouſe* drove things a little too far. It is, I confeſs, the Intereſt of Princes and Republicks to ſuppreſs Impiety, when it dogmatiſes, becauſe of the fatal Conſequences it may have among a Society of Chriſtians: But I cannot tell whether that ſhould not be moderated by Prudence. Mr. *la Croſe* pretends, that a Retracting in form, as *Vanini* did, ſhould be ſufficient; there being room to renew the Proſecution if the Delinquent relapſed. *Gramond*, according to him, drops the Character of an Hiſtorian, by his harſh Method of relating the Fact. The ill Conduct and Misfortunes of Men claim always a Right to our Compaſſion, and which it is unjuſt to deny them; and though it be allowable to abominate their Exceſſes, as they greatly deſerve, yet Humanity requires we ſhould compaſſionate their Perſons. But if the Severity of *Gramond* and the Parliament cannot admit of an Apology, neither I am perſuaded can the laſt Hours of *Vanini*; and particularly his blaſpheming againſt Jeſus Chriſt. In that Paſſage only is conſpicuous the moſt groſs Hypocriſy, ſince he openly inſults him whom he call'd upon in Priſon, and of whoſe Sacraments he had partaken. All this ſhould render Atheiſm very ſuſpicious to us.

Rigour of the Parliament of *Tholouſe*.

Harſhneſs of *Gramond*.

The laſt Hours of *Vanini* dreadful.

Of *Vanini*'s Apology, printed in *Latin* at *Roterdam*.

LV. Such was *Vanini*, as I have repreſented him to you, both from his own Writings, and ſufficient Authority; judge then, Sir, what we muſt think of this Apologiſt, who pretends to

give us an entire Juſtification of him, in a ſmall *Latin* Treatiſe, lately publiſh'd under this Title, *Apologia pro Julio Cæſare Vanino, Neapolitano, i. e.* An Apology for *Julius Cæſar Vanini, a Neapolitan.* I can aſſure you that Piece is not ſeriouſly wrote. It is a Perſon of Learning who is the Author, that drew it up by way of Banter, and in order to try his Wit, in the Defence of a Bad Cauſe. And what is the moſt uſeful in that little Book is, That it relates both for and againſt, and is ample in Quotations, telling you his Authority: Moreover, that there are ſeveral Circumſtances, taken notice of neither by Mr. *Schramm*, nor Mr. *la Croſe*. After having briefly told us the *Names*, the *Country*, *Travels*, and Writings of *Vanini*, he anſwers to eighteen Heads of Accuſation alledged againſt him, at each Particular, making ſome poetical or hiſtorical Obſervations, which are always pleaſing. Theſe following are the Eighteen Articles, with their Anſwers abridg'd; as the Author himſelf gives them at the End of his Book.

Accuſations advanc'd againſt him and the Replies of hi Apologiſt.

1. *It is ſaid* Vanini *knew not God. Which is* Gramond's *Expreſſion.* Deum ignorabat.

Anſw. Becauſe he would not dive out of the Reach of his Underſtanding.

2. *That he brought to light again the Book intituled,* Of the Three Impoſtors.

Anſw. Which is a Chimera.

3. *That he hath advanc'd the very Words of Atheiſts.*

Anſw. Only to point out their Poiſon.

4. *That he hath anſwer'd them very lightly.*

Anſw. Becauſe thinking the old Anſwers ſufficiently known, he look'd out chiefly for new ones.

5. *That he held in Execration the Humanity of Chriſt.*

Anſw.

Anſw. Calumny.

6. *That he hath accus'd the Virgin* Mary *of having loſt her Virginity.*

Anſw. A Fable.

7. *That he eſteem'd Nature the only God.*

Anſw. There have been many illuſtrious Perſons call'd Gods.

8. *That he blam'd thoſe Schoolmen who reaſon'd about Angels.*

Anſw. He relates the Words of others.

9. *That he requir'd a phyſical Account of the Nature of Devils.*

Anſw. Becauſe there is much Superſtition in the Opinions of the Vulgar.

10. *That he denied the Immortality of the Soul.*

Anſw. No where.

11. *That he was an Aſtrologer.*

Anſw. Very well, muſt he therefore be an Atheiſt?

12. *That he conteſted the future Deſtruction of the World by Fire.*

Anſw. After his Method.

13. *That he maintain'd Fatality.*

Anſw. He meant Providence.

14. *That he fancied Letters in the Heaven.*

Anſw. By Superſtition.

15. *That he refutes neither* Cardanus *nor* Haly.

Anſw. Becauſe he had already done it elſewhere. *

16. *That he laugh'd at ſacred Things.*

Anſw. Which, in fact, were not ſuch.

17. *That he was rejected by the Fryars, and turn'd out of their Monaſtery.*

Anſw. As if by that he was rejected of God.

18. *That laſtly he was condemn'd to die.*

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* I ſuppoſe in ſome of his Writings, which are deſtroy'd or loſt; that is what the Apologiſt means.

Anſw.

Anſw. As ſeveral other innocent Perſons have been.

This may ſuffice to ſhew you that little Book is not ſeriouſly wrote; therefore, I do not undertake to refute it: Neither indeed is *Vanini* himſelf worthy of it. Let the Publick only compare this Life with that Defence, and decide accordingly.

LVI. But I cannot yet finiſh without ſpeaking a word or two about Mr. *Bayle*. You know, Sir, the great eſteem I have always had for his Ingenuity, and with what vehemence I have wiſhed he would turn it to a more uniform Uſe, and more worthy of him. I have often been with him, but we never agreed in any Point, but diſputed about every thing. I told him my Thoughts about ſeveral Parts of his Works, as I would now do were he living. So that I flatter myſelf no one will Reflect on me, ſince I take only the ſame Liberty now, as I would have done during his Life. It then may be allowed me to obſerve, that in relation to *Vanini*, Mr. *Bayle* cannot be excuſed for ſpeaking about him in ſo neglectful a manner as he does in his *Penſées Diverſes*. I immediately ſuppoſe he had in his Library *Gramond*'s Hiſtory, ſince he gives us to underſtand ſo in his *Dictionary*, at the Article concerning that *Preſident*, and where he ſpecifies the very Edition he makes uſe of. I likewiſe ſuppoſe he had *Parkers* Book *de Deo*, ſince he quotes him with Approbation, and pretty copiouſly. Now in the firſt Section of that Book, (which is the more curious, becauſe it is an Abridgment of Atheiſm and Atheiſts, a Subject very proper in itſelf, to reliſh Mr. *Bayle*'s Taſte) there is found in it the very Picture of *Vanini*, and that long Paſſage of *Gramond* which

which I ove related at large *. It being thus, I ask, at it may be allowed me to believe, that Mr. *Bayle* had read in *Parker* and *Gramond*, the true Character of *Vanini*. Nay, he confeſſes as mu himſelf in his *Entretiens Poſthumes* againſt M. *Jaquelot*, although he gives us to underſtand, that it was but after the firſt Edition of his *Penſées Diverſes*, in which he has given us a very wrong Idea of the Character and Martyrdom of *Vanini*. That's well; but yet he ſho[illegible] corr[illegible]ed that Article in the latter Edition, or at leaſt retract it in the *Continuation*; the Subject was of ſufficient Importance and Equity, which abſolutely requir'd it. There is ſo much difference between an honeſt Man deſcribed, as he has done *Vanini*, and a Deſcription of one ſuch as is given us of the ſame by *Gramond*, and between a Martyr for Atheiſm, and a notorious *Hypocrite*, ſuch as was our *Neapolitan*; that it was undoubtedly required of Mr. *Bayle*'s Exactitude to make a Note at that part of his Treatiſe, and to let us know he had received better Information on that Subject, and beſides, that all that ſhould be amended in the Supplement to his *Dictionary*. Had he done that, he would not have expoſed himſelf to the juſt Reproaches of Mr. *Jaquelot*, who conſulted the truth of the Hiſtory, and took the advantage of it in his Book, intituled, *Examen de la Theologie de Mr.* Bayle.

But after what manner is *Vanini* ſpoke of in that Book, intituled, *Penſées Diverſes*, or *various Thoughts* †? Firſt, he is repreſented as an honeſt Man, and afterwards as a Martyr

* See above, Ch. LII.

† *Penſées Diverſes*, Tom. I. p. 356. and following Edition of 1704.

for *Atheiſm.* Let us quote the Words of that celebrated Philoſopher, adding thereto, ſome Obſervations which is all at preſent I ſhall do. Mr. *Bayl* imagines without foundatio that *Vanin* was a go Moraliſt.

" The deteſtable *Vanini* (ſays he) who was " burned in the Year 1612, at *Thoulouſe*, for " Atheiſm, had always been pretty regular in " his Morals, and whoever would have under- " taken to attack him on any other Point but " his Doctrine, would have run a great Riſque " of being accuſed of Calumny.

To judge at firſt Sight by the Method Mr. *Bayle* takes, one would think he reſolved to oppreſs us with ſufficient Authority in favour of *Vanini.* Nevertheleſs, contrary to his uſual Cuſtom he urges none, which appears ſomething ſurpriſing in a Man, of that famous Critick's Character, ſo curious in moſt reſpects and chiefly in what relates to the Hiſtory of the two laſt Centuries, and that of the Atheiſts. Was his Library ſo ill furniſhed, that he had no Book in it that made mention of *Vanini? Gramond, Father Marſenne, Garaſſe, Patin* and all thoſe others which Mr. *Bayle* had read, did they unanimouſly aſſert, that our Neapolitan was ſufficiently regular in his Morals? He ſhould be well aſſured of a Fact of that Importance before laying it down as the Foundation of his Reaſoning: Otherwiſe one may always ſay, that the Crimes of the Atheiſts have been deſignedly palliated, whilſt care was taken with much Pains, and ſearch to make conſpicuous the Failings of thoſe that had the leaſt Zeal for Religion.

But this is not all, *Vanini* has been a true Martyr for Atheiſm, he openly dogmatized and maintained his Opinions to his laſt Breath. This is the ſecond Illuſion of Mr. *Bayle.* " When " I conſider (ſays he) that Atheiſm has had

" Martyrs, I doubt no longer, but Atheiſts " have a ſtronger Idea of Honeſty imprinted " on their Minds, than thoſe of the *ſweet* and " *profitable.* For why did *Vanini* ſo indiſcretly " amuſe himſelf to dogmatize before Perſons " who could eaſily bring him to Juſtice. If " he ſought but his own private Profit, he " ſhould have contented himſelf with a per- " fect ſecurity of Conſcience, without heeding " to have Diſciples. He muſt then have had " the deſign in making them either to become " the Head of the Party or to free Men from " a burthen which in his Opinion hindered " them from diverting themſelves at their Eaſe. He ſuppoſes here Atheiſm has had its Martyrs, yet he alledges but two Examples: The firſt is *Vanini*, the other a certain Fryer, whom Mr. *Ricaud* mentions in his *State of the Ottoman Empire.* But of the former I hope he will allow us to think otherwiſe, ſince it appears from the poſitive Teſtimony of *Gramond*, that he uſed his beſt Endeavours for to ſave himſelf. And as to the latter who was named *Mahomet Effendi*, we ſhall ſpeak of him anon, let us leave him for a little while. It ſuffices then that *Vanini* is not a Martyr.

And ſuppoſing there are true Martyrs for Atheiſm, he reaſons at random upon the Principles from whence they act; at firſt giving them a certain greatneſs of Soul, ſaying I doubt not but Atheiſts have in themſelves a juſt Idea of what is honeſt, which is ſtronger in their Minds than that of what is profitable or agreeable. It is certain it muſt be ſo, ſince according to Mr. *Bayle*, they become Martyrs for their Cauſe: But if this laſt Propoſition be denied, and it may be ſaid, that Atheiſts may dogmatize in private, but do not perſevere in

their

their conſtancy to Martyrdom, and conſequently that they have not an Idea of honeſty ſtronger than thoſe of what is ſweet and profitable, then his Superſtructure falls. Let us take for Example *Vanini*. It cannot be denied but that he was an Atheiſt; having but Wit and Ambition, the thirſt after Glory perpetually gnawing him; Mr. *Bayle* pretends he was pretty regular in his Morals: All which makes appear there was ſome Idea in him of Honeſty. The Queſtion is now to know whether that Idea would have carried him to depriv. himſelf of what was ſweet and profitable, and even Life itſelf. But let us not Reaſon upon the uncertain Inclinations of his Heart, let us rather conſult Facts. It is then certain, that in Mr. *Bayle's* ſenſe what is ſweet and profitable has been ſtronger than what is honeſt. For he (*Vanini*) recanted, he was a perfect Biggot in Priſon, he masked himſelf, and remained ſo until he found there was no longer room for Hypocriſy. Truly if Atheiſm had a triumphant Blow to ſtrike, it was in the Perſon of *Vanini*; an Author of thirty Years old, full of Ambition for himſelf and the glory of Atheiſm, who had buffooned *Socrates*, and ſolemnly declared in his Works againſt Diſſimulation. Such a Man, or none but the like, I ſay, ſhould have the Idea of Honeſty to that degree, that the ſweet and profitable ſhould never efface it, or be ſtronger than it, eſpecially in an occaſion ſo deciſive as this; notwithſtanding his Strength failed, or more properly that of Atheiſm.

Mr. *Bayle* always depending upon the conſtancy of *Vanini* preſumes this Queſtion, *For why did* Vanini (ſays he) *ſo indiſcreetly amuſe himſelf to dogmatize before Perſons who could eaſi-*

ly bring him to Juſtice, if he ſought but for his own private Profit, he ſhould have contented himſelf with a perfect tranquility of Conſcience without the deſire of having Diſciples. The word Indiſcreetly, here put in, is a ſufficient Anſwer to the Queſtion itſelf, young Men being for the moſt part ſo, but eſpecially ſuch as *Vanini*, who overflowed with Vanity and Pride. You have ſeen how he praiſes himſelf in his Dialogues, and after what manner he treats *Solomon*, St. *Paul*, *Jeſus Chriſt*; as well as the chief Articles of the Chriſtian Faith. Notwithſtanding he would not paſs for an Atheiſt. In his Dedication to *Baſſompire*, he oppreſſes the Libertines with Reproaches; in his Dialogues he calls them Ante-Chriſts, and in ſhort towards the end of his Book, he is ſo afraid to be attacked that he ſubmits all to the Authority of the *Holy-See*, and recants beforehand of whatever might offend it. His Vain-Glory obliged him to dogmatize ſecretly, but his Self-love provided him always with a back Door to eſcape. Therefore as to what regards *Juſtice*, he did not mind it much, as Mr. *Bayle* imagines, as well by reaſon of his Character of Prieſt, which ſeemed to oblige him to ſubmit to another Juriſdiction, as becauſe of his Wit and Eloquence, upon which he rely'd very much, without mentioning the Difficulties on the ſubject of Providence, upon which he had for a long time reflected, and which he was very capable of rendring confuſed. But after all Mr. *Bayle* can never make me believe, that a Man ſo Puſillanimous as *Vanini*, hath braved a Priſon, he ſo ill ſuffered. *If he ſought but his private profit, he ſhould content himſelf with quietly injoying a perfect ſecurity of Conſcience.* That would undoubtedly be the moſt prudent choice for an Atheiſt.

theiſt. But there are mad Men, ſuch as *Vanini*, who cannot forbear ſpeaking, although it be at their Peril, not that in Reality they are animated by a Principle of Charity or Honeſty; but from either, that of Vain-Glory or Folly, in order to diſtinguiſh themſelves from the vulgar, or murder their time in Buffooneries and merry making, Things very delightful to young People, altho well convinced of the truth of a Providence. Did Men always act according to fixed Principles be it Good or Evil, Mr. *Bayle's* Reflections would be more juſt. But he has abundantly ſhown us himſelf that the Actions of Men are not a neceſſary Conſequence of their Principles. For ſhould an Atheiſt dogmatize, we muſt not for that, believe he has in view to form a Sect, or Charity towards the Publick, no, not in the leaſt: He ſpeaks, argues, declares his Opinion, Jeſts or is Profane to divert his Friends, annoy the Clergy, or laſtly to extol his great Knowledge and Penetration. And in fact he would be very ſorry all Men ſhould become Atheiſts.

But Mr. *Bayle* may yet thus Reply. Obſtinacy is ſufficient to make Men Martyrs for Atheiſm, as in the Caſe of *Mahomed Effendi*. But luckily this Example is the only in its kind, and therefore cannot be laid down as a Rule. Moreover, that we are intirely in the Dark concerning this pretended Martyr, and ſhould we eſteem him, ſuch as that baſe Fellow who burned the Temple of *Diana*, to acquire himſelf a Name, ſhould he, I ſay, do any thing but what would be approved of by all Men of Judgment, and even Mr. *Bayle* himſelf, were he now living? Then we might juſtly aſſert it was either a natural Diſpoſition, folly or Melancholy which was the Cauſe of ſuch Actions:

Of *Mahomed Effendi.*

Actions: The Idea of Honesty having little ſhare therein if any at all. But however, that be *Vanini*'s Example is a Demonſtration, that the Thing in itſelf is neither natural nor probable; ſince notwithſtanding his great aſſiſtance of Youth, Knowledge, Philoſophy, Ambition and many Years Experience, he miſerably yielded, leaving us a living Image and perpetual Monument of the Weakneſs of Atheiſm, that is to ſay of Human Reaſon, abſtracted from the Knowledge of *God*.

This Sir, is all I had to offer you upon thoſe Reflections of Mr. *Bayle*, that concerns our Atheiſt, I have took care to anſwer them for fear of being accuſed of having ſlipped over the greateſt Difficulty. I thought it better to be a little prolix and tireſome at once than have it to do a ſecond time: So much the rather, the Subject being of the utmoſt Importance; and the great Name of ſo celebrated an Authot having impoſed on many. It was the Love of Truth only prompted me to thoſe Reflections. And now I ſubmit the Whole to your learned Judgment waiting for your Deciſion, which will ſave that of the Publick, or at leaſt that will encourage me to expect a favourable from them.

London Aug.
10. 1714.

A

CATALOGUE

OF

Vanini's Writings.

COmmentarii Phyſici. See his Dial. p. 88.
Commentarii Medici. Ibid p. 88, 166.
De Vera Sapientia. See Dial. p. 275 and *Garaſſe*'s Curious Doctrine, p. 1015.
Tractatus Phyſico-Magicus. See Dial. p. 252.
De Contemnenda Gloria. See Dial. p. 359.
Apologia prolege Moſaica & Chriſtiana. See his Amph. p. 38, 64, and Dial. p, 123, 329.
Apologia pro Concilio Tridentino. See Amph. p. 70, 77.
Libri Aſtronomici, printed at *Striasbourg*. See Dial. p. 31.
Apologia pro Chriſtiana Religione adverſus Atheos. See Dial. p. 439. Mr. *La Croze* diſtinguiſhes this Piece from the others but I take it to be the ſame with the *Amphitheatre*.
Amphitheatorum Æternæ providentiæ Divino-Magicum, Chriſtiano-Phyſicum, Aſtrologico-Catholicum adverſus veteres Philoſophos, Atheos Epicureos Peripateticos, Stoicos &c. printed at *Lyons* with Priviledge and Approbation in 1615.
Julii Cæſaris Vanini Neapolitani, Theologi, Philoſophi & J. V. Doctoris, de admirandis Naturæ Reginæ Deæque Mortalium Arcanis, Lib. iv. printed at *Paris* for *Adrian Perier*, 1616, with Priviledge and Approbation.

BOOKS Printed for W. MEADOWS at the *Angel* in *Cornhill*.

1. DR. *Allen's Synopſis Medicina*: Or, A Brief and General Collection of the whole Practice of Phyſick; Containing the Opinions and Judgments of the moſt celebrated Authors, concerning Diſeaſes, their Cauſes, and Remedies: With moſt Cases in Surgery and Midwifery. To which are added Obſervations, very rare and uncommon: And a Curious Treatiſe on all ſorts of Payſons. In two Parts. Tranſlated from the laſt Edition, which is Enlarged, one third Part, by a Phyſician. Price 9 s.

2. An Anatomical and Mechanical Eſſay on the Whole Animal OEconomy; in one View. Wherein is ſhewn the wonderfull Conduct of Nature in all the *Phænomena* attending Human Bodies, with many curious Subjects not commonly treated of. Neceſſary for all Lovers of Knowledge, particularly Young Students in *Anatomy*, *Phyſick* and *Surgery*. With an Alphabetical Catalogue of Authors Names referred to on ſeveral Occaſions in the following Treatiſe. By *John Cooke*, Student in *Phyſick*, and late of the College in *Edenburgh*.

3. The Ceremonies of the preſent *Jews*: Being a ſhort and ſuccinct Account of the Meats that are clean and unclean to them. Their manner of Killing. Their praying at Synagogue, and at Home. Their Waſhing and Bathing themſelves. There Marriage Ceremonies. Divorce. Precepts of the Women. Of Circumciſion. Their Proſelites. Synagogues. Schools. Learning. Contracts. Witneſſes. Oaths. Vows. Sickneſs. Death. Burial. Mourning. Prayers for the Dead. Belief of Reſurrection. Paradiſe. Purgatory. Hell. Of their Prieſts and Rabbins. Their manner of keeping the Sabbath. Paſſover. The Tabernacles. And all others their Feaſts and Faſts. To which are added, The thirteen Articles of their Faith, and an Account of the ſeveral Sects of the *Jews*, the *Phariſeans*, *Sadducæans*, and *Eſſenians*; the *Samaritans*, *Caraites*, and *Rabbiniſts*.

REMARKS IN REFUTATION

OF THE TREATISE OF

JONATHAN EDWARDS,

ON THE

FREEDOM OF THE WILL.

"As to the arguments I have made use of, if they are *quibbles*, they may "be shown so: such knots are capable of being untied, and the trick "and cheat may be detected and plainly laid open."

JONATHAN EDWARDS.

BY W. B. GREENE.

WEST BROOKFIELD, MASS.:
COOKE & CHAPIN, PUBLISHERS.
1848.

NOTE :—Every efficient cause is alive, for life is nothing other than the activity of an efficient cause. All life is in concurrence, that is in relations. God, the absolute cause, is related to himself, and is therefore self-living; all other causes are related to that which is not themselves. The life of all causes, is, consequently, *always subjective, and objective.* These principles, form the basis, not only of this tract, but of the two which preceded it. In a tract soon to be printed, on the Immortality of the Soul, I propose to speak more fully of the doctrine of Life, a doctrine which (if I am not mistaken) forms the foundation of all the sound philosophy of the present epoch. I have hesitated to speak fully of this doctrine hitherto, on account of the abstruse metaphysical nature of the speculations involved in its explanation.

W. B. G.

REMARKS.

"A CAUSE," says President Day, "in the more *extended* signification of the term, is an ANTECEDENT *on which something depends.*" An ANTECEDENT! how? In time, space, or the order of thought? A definition, to be good for any thing must state, clearly and fully (1) the class to which an object belongs, and (2) that which distinguishes the object from all other objects in the same class. President Day states that all causes belong to the class of antecedents, and that they differ from other antecedents in this, that their consequents depend upon them. But this, after all, gives us no clear idea of causation; for nothing is said of the essential causative element, viz.: that EFFICIENCY which makes the consequent to depend upon, and follow, its antecedent — whether in space, time, or otherwheres. President Day speaks, indeed, a little further on, of efficiency, but gives us no reason to believe that he had any adequate notion of the true nature of causes. A consequent which *depends* upon an antecedent *by reason of an efficiency which makes it thus to depend, is an effect;* and the antecedent which brings the efficiency is a CAUSE.

There are various kinds of causes, occasional, instrumental, material, mechanical, efficient, &c.: thus the absence of the sun in the night, is the occasion of the condensing of the vapours in the atmosphere; and, although the absence of the sun cannot itself condense any vapour, yet an efficiency operates during that absence which cannot operate during the sun's presence; thus it is evident that the absence of the sun, and the condensation of the

vapour, are connected as antecedent and consequent, through the operation of an *efficiency:* and therefore the absence of the sun may be said to be the *occasional cause*, of the condensing of the vapor: yet the efficiency inheres not in the sun, but in some other power. An *instrumental cause*, is the instrument by which an efficiency produces its effect: the axe is the antecedent of the chopping of the wood, but the axe might remain forever at the side of the wood, and no chopping take place, if some efficiency did not bring the axe and the chopping into the lation of antecedent and consequent: here the efficiency re- s not in the axe, but in the man who uses the axe.

An EFFICIENT CAUSE is one which acts by virtue of energy ring within itself.

ient causes belong to the general class of causes; but er from all other causes in this, that whereas all other s operate by virtue of efficiency *residing out of* them- , an efficient cause operates always by virtue of efficien- *esiding and inhering in* itself.

he question now presents itself: *Is the soul an efficient cause?* If all our knowledge is derived from observation and experience, we ought to seek an answer to this question from these sources. As the knowledge sought relates to the soul, we must observe the phenomena of the soul's action, a task which each can perform for himself, but which no one can perform for another. Observation, by a man, of the activities of his own soul, is called *consciousness.*

What does consciousness teach in relation to the causative nature of the soul?

Before attempting any direct answer, let us endeavour to remove some of the difficulties that stand in the way of impartial observation. *First:* It may be said that there is no such thing as a soul, that what we call the soul, is but the result of the organization of the body, depending upon the body, as music depends upon the musical instrument, or the blaze upon the candle; and that when the body ceases to exist, the soul, being

a mere play and operation of the organs, will cease also, as music ceases when the instrument is destroyed. Let us see if this opinion be tenable. If the soul is any thing, it is that which calls itself, *Ego, I;* as when I say, *I* will, *I* think, *I* feel, &c. For this *I*, is the personality, which seems to itself to perform voluntary actions. If any concurrence of material organs can perform the functions of this *I*, can give the sentiment of personality, then it is possible that the soul has no real existence in itself, but is a mere operation of the material organs. What is this *I?* what are its place, dignity and functions?

. The recollection of the earliest event of my life that has left its trace in my memory, brings with it the conviction that I have remained identical to myself since the event took place. My body may have changed once in seven years; but that which I call, *Ego, I*, is the same *I* now that it was then. Not only does this act of memory bring with it the conviction of my identity, it brings also the conviction that I have persisted through many changes — that the *I* has persisted through a certain lapse of time. But the *I* only is identical, its thoughts, feelings, volitions, desires, &c. vary at every moment. The identity belongs to the *I* alone, and is anterior to the succession of its thoughts, feelings, desires; for, if the identity of the *I* did not exist, as a prior condition to the existence of the thoughts, feelings, desires, these thoughts, feelings, desires, could not succeed each other. If the *I* were not, in itself, independently of its acts, identical, then the first thought or desire would belong to one person, while the second thought or desire would belong to another. Now our consciousness tells us that all our acts have been the acts of the same person, of the same identical *I*. The *I* does not persist because the thoughts succeed each other, but the thoughts succeed each other because it persists. Succession is only one element of duration; in order that duration should be possible, there must be an identity to bind the discrete elements of succession to each other. As there is *progress* only where there is an element which remains identical, while its conditions are

continually changing, so there is *duration* under similar circumstances only. A thing endures when it remains identical to itself, while that which surrounds it undergoes continual alteration. Remove the identity which persists through the changes, and the continual alteration will remain, but the duration will have vanished.

How do we obtain our knowledge of time? We look at any mass of matter in motion, as, for example, the hand of a clock, and say it is not now where it was, and that, during its motion, time has elapsed; but if the *I* be the same with the thoughts, and not a higher persisting something transcending them, then the *I* that looked at the clock some time ago, is not the same *I* that looks at the clock now; for the thoughts and perceptions have changed, else there would be nothing on which to predicate the affirmation of a lapse of time. If there were not something in man which does not fall into time, something transcending time, then man could have no knowledge of time; for this knowledge does not consist in a knowledge of one event, and a knowledge of another event, but consists in a knowledge of that relation between events, which is *time*. And this knowledge cannot be possessed except by something to which both these events are present, for otherwise, who shall discern the relation between them? If a first fact fall in time, and a second in time, the *I* must exist independently of time, else it can make no comparison, and, without a comparison, it will be incapable of obtaining any notion of time.

All the facts of our memory are equally present to us; a fact that happened ten years ago, is as present to the *I* as a fact that happened yesterday. Time is not a relation of the *I* to the facts of memory, but it is a relation of order and succession, which these facts have among themselves. The *I* therefore transcends time, and is *in eternity*, although all its *acts* take place *in time*. Can any thing more be required to prove the distinct existence and immateriality of the soul? Eternity is not time indefinitely extended, it is not a succession of an infinite number of moments, it is not time at all; for

time and eternity exclude each other. When we say, God looks on a thousand years as one day, and one day as a thousand years, we mean that time has no absolute existence for God, since he created it when he made the world, and now transcends it, and is independent of it, as he would have been if he had never created the worlds. God lives in an eternity, which is a negation of all time and all succession, (an eternal now,) and time is a mere relation resulting from the motion of the creatures he has made. This is a tedious road, but we have gone far upon it, for we have gone one step away from materialism; and that step is infinite. The soul, the *I*, exists as a distinct existence, identical to itself, and it exists, (or, rather, *is*) transcending all time; for, if it did not transcend time, it could have no knowledge of time, while now it knows that all its acts happen in time. But no material change or operation, takes place otherwise than in time; if, therefore, the *I* were an efflorescence of material movement, it would have its being in time; but it does not have its being in time, therefore it is no such efflorescence — therefore it is no mere material operation. [Q. E. D., *I think.*]

The fact of the existence of the soul being settled, what does consciousness teach us concerning its nature? Every one must answer this question for himself. I may say, for my part, (and I think my experience is very much like that of every other person) that my consciousness teaches me that *I* am an active force, capable of thinking, feeling, remembering, &c., for certainly *I* think, *I* feel, &c. Consciousness tells me, therefore, that this active force which I call *I*, is an *efficient cause*; that is, it tells me that it is *I* that exert the intelligence, sentiment, &c., which are revealed in my mental, and other acts. Consciousness tells me that *I* obtain my notion of *efficiency* from the observation of the efficiency which inheres in, and is exerted by, this active force which I call *I, myself:* and experience informs me that I obtain this notion from no other source whatever. The efficiency revealed to me in consciousness, is the only efficiency submitted to my direct observation: for in the outward world, I perceive nothing but effects, and recognise

their causes only by induction. And I should have no suspicion that any effect in nature was produced by a cause, and should make no induction, if the principle of efficient causation were not revealed to me in the observation of my own activity. But knowing that I exert an efficiency, and originate acts, I am led to suspect that I am not the only cause in the world, I am led to suspect that every change is produced by an efficiency adequate to its production. Who ever observed efficient causes directly? It is very easy to observe effects, but all efficient causes, with the exception of one, the *I*, are forever hidden from direct observation.

But here the materialist may cavil. The materialist asserts that every thing is matter, that all our knowledge is sensation transformed, that it is all of it derived through *sensible* observation and experience. I ask him how he obtained his knowledge of the relation of cause and effect, a relation upon which he founds all his reasonings? He answers (as he must) that he obtained this knowledge by observing a constant succession of antecedents and consequents which follow each other in nature. I ask him, also, how he came to know of the existence of the very first material object that fell under his observation? He answers (as he must) that this material object produced an impression upon his senses, and that, noticing this impression, he recognised that it must have proceeded from a cause adequate to its production. But this answer cannot be admitted; for in it he explains the very first act of the acquisition of knowledge, the very first act of observation and experience, by supposing an application by the mind of the principle of the relation of cause and effect; while he affirms, as a fundamental position, that the mind could have no knowledge of this same relation of cause and effect, until after the acquisition of the first fact of observation and experience. If the knowledge of the relation of cause and effect be necessary in order to the possibility of the first fact of observation and experience; and if the first fact of observation and experience be necessary in order to the possibility of the knowledge of the relation of cause and effect; how is a man ever to obtain either? The

knowledge of the relation of cause and effect is indeed necessary in order to the possibility of the first fact of observation; but man has a knowledge of this relation from the beginning; for as soon as he acts, wills, thinks, perceives, he begins to learn the nature of efficient causes, by observing the operations of his own spiritual existence.

But now, while we are answering objections, perhaps it would be well to say a few words to the Pantheist also. The Pantheist affirms that God is the only efficient cause, and that man acts by the efficiency of God operating through him. But he must admit that we obtain our knowledge of efficiency from one source only, viz.: the observation of the efficiency of our own souls; for certainly he can point out no other origin from which this knowledge could have been derived. He will admit also that there is no demonstration of the existence of God, except that founded on the principle of efficiency and causation; for no other adequate argument can be indicated. But, by affirming that God is the only efficient cause, he affirms that the knowledge of efficiency derived to us from observation of the activity of the soul, is *false;* for this observation taught us the causative efficiency, not of the divine nature, but of the soul. Thus the statement that God is the only efficient cause, destroys the sole foundation on which a proof of the Divine Existence can be built. The conclusion of the Pantheist, therefore, by shutting out its only possible premises, annihilates itself: for, if God were the only efficient cause, we never could discover the fact of efficiency, and, consequently, never could be authorised in affirming any thing concerning it.

The soul, being an efficient cause, and revealing itself in consciousness as an intelligence (for the *I thinks*, as well as *acts*,) is evidently a will; for what is a will, if it be not an intelligent power that produces effects bearing the stamp of its intelligence and efficiency? I am revealed to myself as a free will, producing my own volitions, and determining them in the very act of production. It is true, I have not an unlimited power of volition; I cannot will, for example, to do what an ancient Roman might have willed to do, for the circumstances

of this Roman were very different from what mine are: where he might will to dine in Rome, I might will to dine in Boston; and he certainly could not will to dine in Boston, for Boston did not exist in his day. Man's field of action is limited; there are certain things he can do, or thinks he can do, and those he may will to do; there are certain things he cannot do, and these he may wish he might do, and this is a sort of willing. Again, there are certain things so very repulsive in their nature that he can neither will nor desire to do them. Does this prove that man is not free? It proves only that his power of action, and his power of volition, are not infinite. My every day experience proves to me that my field of action, and the number of volitions possible for me, are limited by my own nature and the nature of things — that there are many things I cannot do, many things I cannot wish to do; but my *consciousness* proves to me that there is a field open before me, (limited it may be,) in which I can exert my power of volition; it teaches me, that when *I* will within these fixed limits, it is *I* that will, *I* that originate the volition, *I* that determine it to be one rather than another among these volitions which are possible to me. Our issue with Edwards is therefore plain. We do not maintain that the soul possesses an infinite power, we do not believe that it can will all manner of absurdities: but we do believe that the will can produce volitions within a certain range, *and that all our volitions are produced and determined by our will.*

Let us proceed now to adduce and examine, sentence by sentence, the

Second Section of the Second Part of the Treatise of Jonathan Edwards on the Will.

"If, to evade the force of what has been observed, it should be said, that when the Arminians speak of the will's determining its own acts, they do not mean that the will determines its acts by any preceding act, or that one act of will determines another; but only that the faculty or power of the will, or the soul in the use of that power, determines its own voli-

tions; and that it does this without any act going before the act determined: such an evasion would be full of the most gross absurdity."

We may suppose a conversation to take place between Edwards and his opponent, to the following effect.

Edwards: — I understand you to maintain that the will determines its own volitions.

Opponent: — That is my doctrine.

Ed. — You do not believe that the will determines itself.

Op. — Certainly not. I believe that the will determines, not itself, but its volitions.

Ed. — You maintain, however, that the will not only determines its volitions, but that it determines them without any determining volition going before the volition determined.

Op. — That, sir, is undoubtedly my doctrine, and, if you wish to oppose it, the issue is very clear between us.

Ed. — Our issue is indeed perfectly plain, no one can mistake it; and I now intend to demonstrate to you that your proposition, *That the will determines its own volitions, and this without any act of will going before the act determined,* is full of the grossest absurdity.

Op. — I will listen with patience, objecting, however, with due humility, when I think you wander from the question at issue, or adduce weak arguments.—

"I confess it is an evasion of my own inventing; and I do not know but I should wrong the Arminians in supposing that any of them would make use of it. But it being as good a one as I can invent, I would observe upon it a few things."

I do not suppose that any Arminians ever had recourse to the "evasion" in question; for, if Edwards represents their doctrine rightly (and I know nothing of them except what I learn from him, for I never read their writings,) they were much nearer to our Transcendentalists (who maintain a theory of self-determining-power, the postulation of the non Ego by the Ego,

&c., &c.,) than to any other class of thinkers we have among us at this time. Be that as it may, it is singular that the principles he invented for them should have appeared so new and strange. If he had been better acquainted with the history of philosophy, he would have known that all the great philosophers, with very few exceptions indeed, maintained the very position which he conceives to be almost the climax of absurdity. For example, Plato maintains that the IDEA of a man is not only a causative form which makes a man to be as he is and not otherwise, but that it is also the very substance which makes a man to have a real existence. Thus the Platonic *Idea* would appear to be, not a notion residing in the mind, but a causative substance, making the very essence of a man. This substance, being causative, produces effects; and what are these effects if not the acts of man, among which volitions hold so distinguished a rank? The whole oriental philosophy, being founded on the doctrine of the reality of Potential Existences, coincides with the results of the "evasion" stated by Edwards. But this is a matter of little moment: the question is not whether the "evasion" was originated by Edwards but whether it is philosophical and true.

"*First*, If the faculty or power of the will determines an "act of volition, or the soul *in the use or exercise of that pow-* "*er* determines it, that is the same thing as for the soul to de- "termine volition *by an act of will.*"

I protest against the introduction of a new and unnecessary term. The original proposition (the "evasion") affirms that the will determines its *volitions*. I suppose, however, that Edwards uses the terms *volition*, and *act of volition*, as synonymous; but such a confusion of language is not altogether excusable; for a volition is not an act of volition, but an act of will. I affirm again, that the faculty or power of the will, or, if you please, the soul in the use or exercise of that faculty or power, determines *volition;* but I do not admit that it deter-

mines volition by an act of will, that is by volition: neither do I admit that the proposition affirming that the will determines its volitions, involves this other proposition that the will determines its volitions by antecedent volitions. Is not Edwards misled by the terms volition, and act of volition? Does he not confound in his own mind the volition which is the effect, with the will which is the cause? When a man does any thing, the act of doing is the doing, and when he wills (which is something that he undoubtedly does) the act of will is the volition: yet when a man does any thing, it is by no means necessary that, before he does the thing, he should do the doing; neither does it follow, when the will determines a volition by the free causative power it possesses, that it must first determine the determining. For the determining of a volition is the doing of something; and the determining of the determining, is a doing of the doing. If Edwards affirms any thing he affirms that man cannot will at all; for, according to his reasoning, if a man wills, that is, produces a volition, he does it in the exercise of the faculty or power of will, that is, in an act of the will, and the acts of the will are volitions; therefore, he produces a volition in an act of will which act of will is itself a volition; that is, (never mind the length of the leap) he produces one volition by *another*. But this other, being a volition, (never mind the fact of its being *the same* volition,) and having been produced, must itself, for the same reasons, have been produced by still another volition, and this last by still another, and so on through an infinite series of volitions which must have preceded any volition which actually takes place: and, as it is evidently impossible that any volition could take place under such conditions, it follows that no volition does take place, in other words, it follows that man does not actually will at all. When a preacher once undertook to prove that his hearers could not be saved in any way whatever, the hearers remarked to each other that it was very *close* preaching: the preceding process of reasoning might very properly be said to be very close metaphysics. When a man does any thing he does it in the exercise of the faculty he possesses *of doing* it;

therefore he does a thing by doing it: all this is plain, but if we had one or two ambiguous terms to be used in two or more different senses, like *will, act of volition*, &c., we could easily prove that because a man cannot possibly do a thing without doing it, it necessarily follows that he cannot do it at all. But Edwards has made his statement, let him defend it.

"For an *exercise* of the power of the will, and an *act* of that "power, are the same thing."

I cannot object to the statement made in this sentence.

"Therefore, to say that the power of will, or the soul in the "*exercise* or *use* of that power, determines volition, without an "act of will preceding the volition determined, is a contradic- "tion."

There is no contradiction whatever in the statement. The exercise or use of the power of will is itself the volition, for what is a volition but an act of the will? The will acts in one way or in another, the action in either case being a volition, and, by acting in one way or in another, it determines the volition to be one volition or another, and that without any necessity for a foregoing act of will. Where is the contradiction? When I affirm that a nail machine is composed of a pair of shears, which cut a piece of iron into a nail, determining, in the very act of closing upon, and cutting, the iron, whether the nail shall be a ten-penny nail or otherwise, and this without previously cutting out a ten-penny (or other) nail, as a prior condition necessary to the cutting of the very first nail — is there contradiction involved in my statement? The soul, I acknowledge, is not to be compared to a dead machine, whose productions are determined in form by the form of the mechanism, for the soul is an efficient cause and determines its volitions, not by reason of any physical conformation, but by the causative efficiency that inheres in itself: nevertheless

the logic which would derive from one statement the necessity of an antecedent volition, would derive from the other the necessity of an antecedent ten-penny nail.

"*Secondly*, If a power of will determines the act of the "will, then a power of choosing determines it. For as was "before observed, in every act of will there is choice; and a "power of willing is a power of choosing."

I am willing to accept this definition, though I conceive it to be a very weak one. The power of will is exerted mainly in dwelling upon feelings or thoughts, and in *exciting muscular motion*. Choosing is a very small part of the functions of the will; indeed, defining the will to be a mere power of choosing, is attempting to misrepresent the limit of its efficiency. The will is that power by which we have the faculty of *originating action*. It is through the energy of the will, of the inhering activity of the soul, that we have been enabled to cause our bodies to perform the labours which have changed the surface of the earth. If the will is a mere power of choosing, by what power do I move my hand in writing these lines? Nevertheless I am willing to accept the definition of Edwards; for undoubtedly the power of will includes the power of choosing.

"But if a power of choosing determines the act of volition, "it determines it by choosing it."

Whenever a power of choosing actually chooses one thing in preference to another, that *act of choosing* is the volition itself: if, therefore, a power of choosing should select between two volitions, and choose one, it would not determine either of those volitions (for they are determined already in their own natures, else there would be no occasion for choice between them) but it determines its own act of choosing between the two, that is, it determines a new volition, different from either, viz.: its own act of choosing, whether it will have one volition

(say, a certain line of conduct) or another. So the sentence of Edwards, properly corrected, would read as follows: If a power of choosing determines the act of volition, it determines it by choosing, not *it*, but *something which is not the volition.* When I am in doubt whether I will read Milton or Shakspeare, and conclude to read Milton, I determine my choice by choosing Milton—not by choosing to choose Milton; I determine the volition, not by choosing the volition, but by choosing the outward object. And whenever I actually choose any outward object, I determine, by thus choosing, the volition to be the volition it is, rather than another.

It is necessary that we should notice, in passing, the ambiguity which is attached to the word *determine*, as it is used by Jonathan Edwards: for this word has two distinct meanings, and, by using it in the original proposition according to one of its significations, and in the discussion according to the other, he succeeds in confusing the whole subject, making an ingenious play of words to stand in the place of sound reasoning. The dictionaries give us the following definition: To DETERMINE:—*to fix; to settle; to limit; to conclude; to resolve; to decide.* Evidently, according to this definition, the expression "the will determines its own volitions," may signify, either: 1st. That it settles, fixes, limits and defines, its volitions; or, 2d. That it resolves upon a volition, deciding that it will have one rather than another, *choosing* to have one rather than another. Thus the word determine may be used in the sense of *determine upon*, and by the will's determining a volition may be meant a *choosing* of that volition; but the word may be used, on the other hand, to mean, *settle, fix, or limit*, in which case the determination will be, not a choosing, but a *settling, fixing, or limitation.* If now we understand the word determine, in the sense of choosing, the sentence under immediate consideration will undoubtedly be true: "If a power of choosing determines (chooses) a volition, it determines it (chooses it) by choosing it." But this is evidently not the signification of the word in the original proposition, for Edwards

there guarded the meaning, and fixed it, by saying, in behalf of the Arminians, that the determination of the volition takes place "without any act of will going before the act determined." So the sentence under immediate consideration appears to be not only trivial in itself, but also altogether irrelevant. The original proposition affirms, by saying that the will determines its own volitions—not that the will *chooses* them, but that it *makes them to be as they are and not otherwise.* The will by choosing an outward object, fixes, settles, determines, the volition, makes it to be what it is, and not otherwise: by choosing the object, it settles, fixes, determines, the act of choice, which is the volition; for a man cannot choose any one thing without settling and determining the matter that his act of choice shall be the particular choice it is: yet he chooses not the choice, but the object. I choose to have beef for dinner, but I choose, not the choice, (which is the volition) but the beef (which is the object of the volition.)

"For it is most absurd to say that a power of choosing de-
"termines one thing rather than another, without choosing
"any thing."

I admit that the power of choosing does really choose something, but that something is not the choice, but the object of the choice, the object which is chosen.

"But if a power of choosing determines volition by choos-
"ing it, then here is the act of volition determined by an an-
"tecedent choice, choosing that volition."

This again is not to the point. We do not say, and we have not said, that a power of choosing (that is, the will) determines a volition by choosing it: our original proposition was that the will *determined its volitions*, and we now say, as we then meant, and supposed we should be understood to mean, (I speak not only for the Arminians, but, I conceive, for all

sensible men,) that the will determines its volitions, not by choosing *them*, but by choosing *the objects* of those volitions.

"*Thirdly*, To say, the faculty, or the soul, determines its "own volition, but not by any act, is a contradiction."

This is all very well: we should prefer, however, to replace the expression *by any act*, by the words *in any act*. But perhaps *by any act*, may mean the same as *in any act*.

"Because for the soul to *direct*, *decide*, or *determine* any "thing, is to act; and this is supposed; for the soul is here "spoken of as being a cause in this affair, bringing something "to pass, or doing something; or, which is the same thing, ex- "erting itself in order to an effect, which effect is the deter- "mination of volition, or the particular kind and manner of "an act of will."

Not at all. The will does *not* exert itself in order to the *determination* of volition. The determination of volition is not a distinct volition, but is the mark and characteristic which distinguishes one volition from all others. The soul exerts itself in order to effect a *volition*; the soul *wills*, and *determines* the volition incidentally, without intentionally exerting itself to that effect. To say that a volition *is voluntary*, is to say either (1) That a volition is a volition, which is very true, but insignificant, or (2) That one volition is determined by another volition, which is false, or, at least, by no means clearly demonstrated as yet by any person. If a man does any thing, he does *the thing*, but I take it he troubles himself very little as to who shall do the doing. The soul exerts itself in this particular act, viz.: of choosing between two or more objects presented to it. The soul chooses; but it never thinks of willing to will to will, &c., to choose. If it chooses one object, it determines its choice to be a choice of that object, without ever dreaming of determining so to determine.

"Again, the advocates for this notion of freedom of the

"will speak of a certain sovereignty of the will, whereby it "has power to determine its own volitions. And therefore the "determination of volition must itself be an act of the will; "for, otherwise, it can be no exercise of that supposed power "and sovereignty."

We do not feel called upon at this time, to defend the Arminians: what with the ambiguity involved in the words, *will*, (which may mean the faculty of the will, or a particular volition); *volition* (which Edwards sometimes seems to use as synonymous with the volitive faculty itself); *determining; act of will; act of volition;* &c., the subject is sufficiently confused already: we have no idea of entering into a discussion which shall turn on the double meaning of such a word as *sovereignty*. Besides, all this has nothing to do with the original issue which we proposed to maintain.

"Again, if the will determines itself, then either the will "is *active* in determining its volitions, or it is not."

If I do not misapprehend the matter at issue, this sentence is not only absurd, but ridiculous. "If the will *determines itself*"!—the evasion that Edwards considers so absurd states, not that the will determines *itself*, but that it determines its *volitions*. Edwards shows here a lamentable ignorance of the nature of efficient causes. Is there no difference between a cause determining *itself*, and a cause determining *its effect*?

"If it be active in it, then the determination is an *act* of "the will; and so there is one act of the will determining an- "other."

The nail machine produces ten-penny nails; but the *act* of the machine, producing a ten-penny nail, is not itself a ten-penny nail.

"But if the will be not *active* in the determination, then how does it *exercise* any liberty in it?"

The will is active.

"These gentlemen suppose, that the thing wherein the will "*exercises* liberty, is in determining its own acts."

The gentlemen referred to, are, I suppose, the Arminians. For ourselves, we do not know what Edwards means by the *exercise* of liberty. Liberty is a state and not an active power. But all this is foreign to the purpose: we are discussing the question whether the will determines its own volitions; this new question, whether the will *exercises* liberty in so doing, we may put off to a more convenient season.

"But how can this be, if it be not active in determining? "Certainly the will, or the soul, cannot *exercise any liberty* in "that wherein it doth not *act*, or wherein it doth not *exercise* "*itself*."

This is all very true.

"So that if either part of this dilemma be taken, this "scheme of liberty, consisting of self-determining power, is "overthrown."

Edwards may overthrow the scheme of liberty, consisting in self-determining power, as often as he pleases; our patience is inexhaustible: we would suggest, however, that he wastes his labor, as we maintain no such "scheme." Our doctrine is —not that the will possesses a self-determining power—but that it possesses a power of determining its own volitions.

"If there be an act of the will in determining all its own "free acts, then one free act of the will is determined by an- "other; and so we have the absurdity of every free act, even "the very first, determined by a foregoing free act."

This *if*, commencing the sentence, in sign of supposition, is impertinent: for no such supposition is admissible. The original proposition states clearly that "the will determines its

" volitions, without any act going before the act determined." As the supposition cannot take place, the absurdity does not follow.

" But if there be no act or exercise of the will in determin-
" ing its own free acts, then no liberty is exercised in deter-
" mining them."

My bodily freedom consists in the fact that I am not imprisoned, bound, or prevented by any outward constaint from exercising my bodily powers. I suppose the freedom of my will to consist in the fact, that when several objects of choice are presented to me, or several lines of conduct are open before me, that I can really choose one of these objects, or follow one of these lines of conduct, and this without being compelled, or necessitated, so to do, by any power, external or internal, save that sole power which is the efficient cause of the volition, and which I call *Ego, I.* Now, we do not maintain that the will determines its determinations, chooses its choices. I do not conceive that freedom consists in a man's willing as he wills to will; but I hold that man *wills*, and that the very word *will* includes the idea of freedom. I choose between two outward objects, and my freedom consists in my ability to choose between those objects, and this ability I possess: I cannot even discern any meaning in the expression that liberty consists in the power of choosing between different choices. If I choose between two objects, is it not *I* that choose? Do I not exert an efficiency in so choosing? Can I choose without incidentally determining the act of choice to be the act of choice it is rather than another? And is it necessary, before I choose at all, that I should *voluntarily* determine the act of choice, by first selecting a choice, which, by the conditions of the question, must be a choice without an object, a choice that chooses nothing, and therefore no choice at all? How shall we find an end to all these absurdities? Verily, by adhering to the question at issue.

" From whence it follows, that no liberty consists in the " will's power to determine its own acts; or, which is the same " thing, that there is no such thing as liberty consisting in a " self-determining-power of the will."

Same thing!—This sentence shows that Edwards has no comprehension whatever of the question at issue; for he assumes that for the will to determine its *acts*, and for it to determine *itself*, are the same thing. Is there no difference between a cause and the acts of that cause? The original proposition is this, The will determines, not itself, but its volitions.

" If it should be said, that although it be true, if the soul " determines its own volitions, it must be active in so doing, " and the determination itself must be an act; yet there is no " need of supposing this act to be prior to the volition deter- " mined: but that the will or soul determines the act of will " in *willing;* it determines its own volition, *in* the the very " act of volition; it directs and limits the act of will causing " it to be so and not otherwise, *in* exerting the act, without " any preceding act to exert that."

This statement, although it contains some ambiguous words, we are by no means unwilling to accept.

" If any should say after this manner, they must mean one " of these three things: either (1) that the determining act, " though it be before the act determined in the order of nature, " yet is not before it in the order of time."

We do not mean this.

" Or, (2) That the determining act is not before the act de- " termined, either in the order of time or nature, nor is truely " distinct from it; but that the soul's determining the act of " volition is the same thing with its exerting the act of volition;

" the mind's exerting such a particular act, is its causing and " determining the act."

This is precisely what we do mean.

" Or, (3) That volition has no cause, and is no effect; but " comes into existence, with such a particular determination, " without any ground or reason of its existence and determina- " tion. I shall consider these distinctly."

A man must be insane to take this last position. We assert a cause for volition, viz.: the will itself.

" 1. If all that is meant be, that the determining act is not " before the act determined in order of *time*, it will not help " the case at all, though it should be allowed. If it be before " the determined act in the order of nature, being the cause " or ground of its existence, this as much proves it to be dis- " tinct from it and independent on it, as if it were before in " the order of time. As the cause of the particular motion of " a natural body, in a certain direction, may have no distance " as to time, yet cannot be the same with the motion effected " by it, but must be as distinct from it as any other cause that " is before its effect in the order of time: as the architect is " distinct from the house which he builds, or the father dis- " tinct from the son which he begets. And if the act of the " will determining be distinct from the act determined, and be- " fore it in the order of nature, then we can go back from one " to another, until we come to the first of the series, which has " no act of the will before it in the order of nature, determin- " ing it; and consequently is an act not determined by the will, " and so not a free act, in this notion of freedom. And this " being the act which determines all the rest, none of them are " free acts. As, when there is a chain of many links, the first " of which only is taken hold of and drawn by hand; all the " rest may follow and be moved at the same instant, without " any distance of time; but yet the motion of one link is be-

"fore that of another in the order of nature; the last is moved "by the next, and that by the next, and so till we come to the "first; which not being moved by any other, but by something "distinct from the whole chain, this as much proves that no "power is moved by any self-moving power in the chain, as "if the motion of one link followed that of another in the or-"der of time."

We have no issue with Edwards here. We abandoned the proposition he combats, when he first stated it.

"2. If any should say that the determining act is not before "the act determined, either in the order of time or nature, nor "is distinct from it; but that the *exertion* of the act is the *de-"termination* of the act; that for the soul to exert a particular "volition, is for it to cause and determine that act of volition: "I would observe that the thing in question seems to be for-"gotten, or kept out of sight, in a darkness and unintelligible-"ness of speech; unless such an objector would mean to con-"tradict himself."

Why all this fire? Here is the very point at issue; and the reader will he very well able to judge on which side rests the greater depth of darkness.

"The very act of volition itself is doubtless a determination "of mind; *i. e.* it is the mind's drawing up a conclusion, or "coming to a choice between two things, or more, proposed "to it."

Undoubtedly.

"But determining among external *objects* of choice is not "the same with determining the *act* of choice itself, among "various possible acts of choice."

Nothing can be more true.

"The question is, What influences, directs or determines the "mind or will to come to such a conclusion or choice as it "does? Or what is the ground, cause or reason, why it con- "cludes thus, and not otherwise?"

Presto, change!—This is the first explicit intimation we have received that *the question at issue* relates to the cause or reason which makes the will choose as it does choose. The question stated in the original proposition, is a question of fact: it is this, *Does the will determine its own* VOLITIONS, *and that without any act of will going before the volition determined?* The efficiency which makes the volition to be what it is, resides in the will itself—but this is not to the point, let us adhere to the original proposition.

"Now it must be answered, according to the Arminian no- "tion of freedom, that the will influences, orders, and deter- "mines itself thus to act."

What have we to do with the Arminian notion of freedom? or with the will's determination of itself? All this is foreign to the point.

"To say it is caused, influenced, and determined by some- "thing, and yet not determined by any thing antecedent, eith- "er in order of time or nature, is a contradiction. For that "is what is meant by a thing's being prior in the order of na- "ture, that it is some way the cause or reason of the thing with "respect to which it is said to be prior."

We do not feel called upon to defend the Arminians.

"If the particular act or exertion of will, which comes into "existence, be any thing properly determined at all, then it "has some cause of its existing, and of its existing in such a "particular determinate manner, and not another; some cause,

" whose influence *decides the matter*; which cause is distinct " from the effect, and prior to it."

The soul, or will, is the cause which determines volition, and it is the influence of the soul, or will, that *decides the matter*. The will is distinct from the volition, is the cause of which the volition is an effect, and is prior to it.

" But to say, that the will or mind orders, influences, and " determines itself to exert such an act as it does, by the very " exertion itself, is to make the exertion both cause and effect; " or the exerting such an act, to be a cause of the exertion of " such an act."

But we do not say, and have never said, or even implied, " that the mind or will orders, influences, and determines *it-* " *self*."

" For the question is, what is the cause, or reason, of the " soul's exerting such an act? To which the answer is: The " soul exerts such an act, and that is the cause of it."

We deny that there is any such question at issue.

If a problem should be stated in this way: *Why is it that the pride of Satan is uniformly of a pale violet color?* we think a wise enquirer would endeavor to solve it, not by attempting to find reasons why such a particular manifestation of Satanic character should have this color rather than another, but by showing that the ideas of color and pride are incompatible with each other, because one is a quality of matter and the other a quality of spirit. Thus he would show *the absurdity of the question*.

Now we suppose some of our readers may think that Edwards' questions, " What is the cause or reason of the will's " exerting such an act rather than another? What influences,

" directs, or determines the mind or will to come to such " a conclusion as it does?" though impertinent in the connection, ought, nevertheless, to receive an answer. The question, *What determines the will?* is absurd; for the will is an efficient cause, whose very essence consists in its producing and determining power: the will is that which *determines*, not that which *is determined*. If the will be determined at all, it must be determined either (1) by itself, or (2) by that which is not itself. But (1) it cannot be determined by itself, for it is an efficient cause, which brings something to pass which is an effect, distinct and different from itself: and if this effect were a determination of itself, then the causative energy would be identical with the effect produced by it. But Edwards has done full justice to the doctrine that the will determines itself, so that we have no occasion to waste words upon it. This form of expression, *the self-determining power of the will*, would not seem plausible for a moment, if it were not for the double meaning of the word *will*, which signifies sometimes a faculty of the soul, *the will*, and sometimes a *volition*, which is an effect of that faculty. The will cannot be determined (2) by that which is not itself; for then the will would cease to be a will. If we define (with Edwards) the will to be a power of choosing, it will follow that wherever the will chooses, it chooses between two or more. But if it be determined by something which is not itself, that it shall choose one rather than another, then it has no choice between two, in fact, no choice at all, for some alien power has chosen for it between the two, and limited it to one; in this case, therefore, the will does not choose, and as the power of the will manifests itself in choosing, the will does not manifest itself at all, but gives way to a higher power that manifests itself in its stead.

Edwards proves truly that the will cannot determine itself, but he ought to go further, and show that *the will cannot be determined at all*. The will *determines*. When we can speak sensibly of the violet color of Satanic pride, perhaps we

shall be able to speak sensibly of the will's *being determined.*

"And so, by this, the exertion must be prior in the order of "nature to itself, and distinct from itself."

This conclusion does not follow from any thing we have said.

"3. If the meaning be, that the soul's exertion of such a "particular act of will is a thing that comes to pass *of itself*, "without any cause; and that there is absolutely no ground "or reason of the soul's being determined to exert such a voli- "tion, and make such a choice, rather than another; I say, if "this be the meaning of Arminians, when they contend so "earnestly for the will's determining its own acts, and for lib- "erty of will consisting in self-determining power; they do "nothing but confound themselves and others with words with- "out a meaning. In the question, *What determines the will?* "and in their answer, that *the will determines itself*, and in all "the dispute about it, it seems to be taken for granted, that "something determines the will; and the controversy on this "head is not, whether any thing at all determines it, or wheth- "er its determination has any cause or foundation at all; but "where the foundation of it is, whether in the will itself, or "somewhere else. But if the thing intended be what is above "mentioned, then all comes to this, that nothing at all deter- "mines the will; volition having absolutely no cause or foun- "dation of its existence, either within or without. There is a "great noise made about self-determining power, as the source "of all free acts of the will; but when the matter comes to be "explained, the meaning is, that no power at all in the source "of these acts, neither self-determining power, nor any other, "but they arise from nothing; no cause, no power, no influ- "ence, being at all concerned in the matter.

"However, this very thing, even that the free acts of the

" will are events which come to pass without a cause, is cer-
" tainly implied in the Arminian notion of liberty of will;
" though it be very inconsistent with many other things in
" their scheme, and repugnant to some things implied in their
" notion of liberty. Their opinion implies, that the particular
" determination of volition is without any cause; because they
" hold the free acts of the will to be *contingent* events; and
" contingence is essential to freedom, in their notion of it.
" But certainly, those things which have a prior ground and
" reason of their particular existence, a cause which antece-
" dently determines them to be, and determines them to be
" just as they are, do not happen contingently. If something
" foregoing, by a causal influence and connection, determines
" and fixes precisely their coming to pass, and the manner of
" it, then it does not remain a contingent thing whether they
" shall come to pass or no.

" And because it is a question in many respects very impor-
" tant, in this controversy about the freedom of the will, *wheth-*
" *er the free acts of the will are events which come to pass*
" *without a cause;* I shall be particular in examining this point
" in the two following sections."

We have no issue here with Edwards; we have already said that we should consider a man insane who should undertake to maintain the proposition to which these sentences refer. Besides, these sentences have no relation whatever to the original proposition under discussion, the only proposition that interests us in this connection.

Having now quoted, and remarked upon, the whole of the Second Section of the Second Part of the Treatise of Jonathan Edwards on the Freedom of the Will, I hasten to conclude.

The whole question may be reduced to very simple terms. Let us define (with Edwards) the will as a power of choosing.

Now, the will either chooses, or it does not. If it chooses one thing rather than another, it *determines* the act of choice to be the choice of one thing, rather than the choice of another. But the act of choice is the volition, and as the will determines the act of choice, *it determines the volition*.

The other supposition, that the will, a power of choosing, does not choose at all, is inadmissible; for every body knows that the will chooses: and the observation in consciousness which proves it, is so simple, that it is probable no man could be found on the face of the earth to deny it.

We close by quoting one other passage from our author:

"I am willing my proofs should be thoroughly examined; "and if there be nothing but begging the question, or mere "logomachy, or dispute of words, let it be made manifest, and "shown how the seeming strength of the argument depends "on my using words without a meaning, or arises from the am- "biguity of terms, or my making use of words in an indeter- "minate and unsteady manner; and that the weight of my rea- "sons rests mainly upon such a foundation: and then I shall "either be ready to retract what I have urged, and thank the "man that has done the kind part, or shall be justly exposed "for my obstinacy."

CIRCULAR

OF THE

INSTITUTION FOR THE EDUCATION

OF

IDIOTS,

IMBECILES, AND CHILDREN OF RETARDED DEVELOPMENT OF MIND,

BARRE, MASS.

JANUARY 1, 1851.

WORCESTER:
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1851.

Introduction.

Two years and a half have now elapsed since I first opened my Institution for the education of Idiots. A reasonable hope of success has not been disappointed, either in obtaining suitable subjects for instruction, or in the progress and improvement they have manifested in return for my labors.

Under these circumstances, it would seem not improper, that I should at this time give to those interested in this new channel of education and philanthropy, some of the results of my efforts as well as a brief account of the means, moral and educational, by which these results have been accomplished.

I know better than any one else can know, in how much I come short of being a model teacher of Idiots, but I am not unwilling to publish the result, even, of those imperfect labors, that other individuals, in all respects better qualified, may be encouraged to make the education of Idiots, in this country, their life-task.

I ought in justice to myself to add, that my institution was the first of the kind in the United

States. It was proposed and opened at a time when very little was understood, at least in this country, either of the nature of idiocy or of any hope of success in the management and education of Idiots. From which circumstances some little time elapsed before I could regard my Institution as established upon a permanent basis.

I may further add, that in most of the cases which I shall describe, the educational course is but partly completed—and that I shall hope with a longer continuance of my labors, still higher accomplishments.

I have selected the following cases from the 15 different pupils that have been under my charge, not because they have been the most favorable of the number, but as manifesting the greatest variety of mental condition, disposition, and habits, and for that reason, as illustrating the greatest variety of modes of instruction and management.

I have not assigned the several cases to any particular class, lest I might be misunderstood in my classification.

H. B. WILBUR, M. D.

Report of Cases.

CASE No. 1. A boy of 11 years old; sanguine temperament; of average size, head slightly irregular in its confirmation; subject to epileptic spasms and a constant diarrhea. He was healthy and intelligent until the period of first dentition, during which period he had severe and long continued convulsions, which left him at the end of a year, with the spasms above-mentioned and profound idiocy. There was a want of control of the muscular system of the limbs, producing a peculiar gait. His organs of sensation were apparently good. His perceptions of the objects of the sight, hearing, and touch, were almost wanting. With such feeble perceptions of the external world, of course his intellectual operations were of the most limited character, relating almost entirely to the gratification of his natural appetites. He perceived only those properties of matter which have relation to those appetites, and his highest mental efforts resulted only in leading his attendant to the cupboard or the water-pail.—Watch him ever so closely and he manifested no sign of consciousness of anything about him. No sights attracted his attention; no sounds disturbed him. He had no idea of language, not even distinguishing tones of approbation from tones of displeasure; never expressing any want by sounds, and capable only of a few rude and inarticulate cries.

He was entirely destitute of the faculty of imitation; he had no idea of musical sounds and it was impossible to fix his attention for a moment.

He was subject to violent fits of passion which were always exhausted upon himself. When thus excited he pinched and bit himself, beat his head against the wall, and pulled his hair, from which latter cause the back part of his head was entirely bald. He was destitute of *will*, except as before mentioned, in its relations to the gratification of his appetites; without power of grasping any object placed in his hands. He had no fear except the instinctive one of falling, for he knew no cause of danger.

He was in constant motion through the day, now throwing himself upon the floor, now running from one part of the house to another, occupying himself only in shaking a bunch of strings before his eyes, or twisting them around his fingers to produce a tickling sensation. His restlessness manifested itself also in a variety of mechanical habits; a constant rocking of his body from side to side; and a frequent slapping of the hands upon the thighs. His discharges were involuntary, and he was tormented by an incessant hunger and thirst. He was accustomed to being rocked to sleep in the arms of his mother or a servant, and woke usually at 3 or 4 o'clock in the morning. He had never known the slightest useful occupation, had never obeyed a single positive command, whether expressed by words or signs. He was as helpless as an infant, and when left by his parents manifested less than an infant would an appreciation of his change of circumstances.

My first efforts were of course directed to breaking up his numerous troublesome and disagreeable habits. I put him in a bed which had been prepared for him in my own room, at a regular time every night. This was by no means in accordance with his inclinations and I was compelled to hold him firmly for two or three hours, for several nights; never suffering my eyes to wander from his face. The same struggle was renewed each morning, at an early hour. A week or two sufficed to conquer any irregularity of his, either in going to bed or rising. But this was not all; the lesson was taught him that my will was paramount to his.

I drew him by main force up a ladder placed at an angle of 45° against the wall. The instinct of self-preservation caused him to grasp, with hands unaccustomed to prehension, the rounds of the ladder; till with loud outcries and cautious steps he took courage to descend. This was repeated day after day.

Marching in front of him, with face towards him, I made him follow me;—occasionally he darted from me, but was brought back to follow me, till he became quite passive in the march. In time I ascended the ladder and he followed a few steps, getting down as before. Each day he proceeded a little higher, till the ladder was no longer a source of dread to him.

I then placed heavy iron dumb-bells in his hands which he seemed afraid to drop—these were replaced by lighter ones from time to time, until he could grasp objects that were smaller and of less weight.

I took him into the open air with me, now running and urging him to follow me—now following and inciting him to run.

The exercises upon the ladders placed at different angles are continued, for while they strengthen the muscular system they require the constant exercise of the attention.

I learned him to pick up objects of various forms. Now I blindfold him, making him follow me by the sound of my voice, teaching his ear to understand the direction of sounds —educating one sense by shutting up the communication to the mind through the medium of another. Putting a fork in his hand, I allowed him to have no other food except what he took up with it; my hand holding it in his and guiding it to his mouth. These acquirements all cost time and patience. To illustrate this I need only say that this last, ability to feed himself, required five weeks of instruction. Since that period he has always sat at the table with us, eating with propriety both with a fork and spoon.

I commenced with exercises in imitation. I held up my arms and then placed his in the same position; dropped mine by my sides and carried his down in the same manner. By dint of ten thousand repetitions, he learned to follow me in these successive acts. Each new act of imitation required less labor. One fact deserves a mention from its singularity. After learning to imitate me in several motions of the arms when quite near him, I found on removing to a little distance that he took no notice of me, and I was compelled to renew the exercises at various distances. His perceptions of sight seemed to extend only to objects within very limited distances.

I strove to exhaust his constant restlessness by frequent and fatiguing exercises upon the ladder; taught him to appreciate musical sounds; corrected a disagreeable habit of swallowing by making him hold a small stick in his mouth; and learned him to carry his head erect by placing a small block of wood upon his head. I need not give farther details of the course pursued with him, but only add a brief account of his present condition,

He has now been with me two years. His form is more erect and carriage better. His spasms have in a great measure ceased, his diarrhea entirely disappeared. No exercises upon the ladders seem too difficult for him, and he ranges over my series of ladders with great rapidity and fearlessness, obe-

lient to my slightest sign or word of command. He marches and goes through a series of exercises in imitation with the precision and celerity of a soldier. His senses have been educated and his perceptions wonderfully increased; he sees my slightest motion and detects my step in the entry. He is fond of music, dancing in the best of time at our usual family dances. He has acquired no inconsiderable manual dexterity, picking up small objects from the floor; threading small brass bead with a needle; piling wooden blocks upon the floor; handing thin cards, one by one, at my bidding; wheeling a wheelbarrow which he manages with great adroitness; imitating various marks with a crayon on the blackboard; partly dressing and undressing himself, &c., &c.

He can now sit quietly in a chair, both in the school and elsewhere; he rarely pinches himself or pulls his hair; in short all his vicious or disagreeable habits have been much improved if not entirely eradicated. His case presented more obstacles in the way of successful instruction and management than any I ever recollect to have seen. His progress has been slow, but each successive week has exhibited some improvement in him; his intelligence increased; his will more subdued; his habits corrected, and his physical system more developed. I will only add to a description that may already seem tedious, that I regard myself, as yet, but laying the foundation for future acquirements.

Case No. 2. A boy of 12 years old—fine looking and well proportioned; peculiar from birth. He had always enjoyed good health. He was very restless and excitable.

He was unable to speak at all until he was 7 years old, and when he came to me, could only pronounce words of one syllable and those quite unintelligibly. He did not know a single letter of the alphabet—had no idea of colors and could not count at all. His attention could not be controlled for an instant. Imitation good. He was affectionate, generous, and very easily managed, though quite mischievous. He had a habit of biting his nails, filling his pockets with strings and sticks; and also a weakness of the bowels that made no small amount of trouble.

My first labor was of course to teach him the elementary sounds of the language; then words, and finally to construct sentences; then to learn him to read by words.

He has been with me 8 months, and his progress has been entirely satisfactory to myself and to his parents. He knows almost all the elementary sounds of the language ; multitudes of words of two or more syllables, and manifests a good deal of facility in constructing sentences expressive of his wants, his thoughts, and his emotions. He is far less excitable than formerly. He masticates his food much better, and all derangement of the bowels is obviated. He can distinguish all the forms of letters, and can read a multitude of words.

Case No. 3. A girl of 13 years old ; retarded development of mind. With the exception of a deformity of the right hand, well-formed and active, though rather awkward and heedless in her carriage. She had a good memory and was desirous of learning. She had very little power of fixing the attention and had no idea of the relations of numbers.— She could read pretty well, but it was rather a mechanical exercise than otherwise. She manifested her deficiencies most of all, by a habit of asking questions that indicated a great want of thought.

She had always been at school but had been allowed by her teacher from very kind motives, to move along in her studies with as little mortification to the child and her parents as possible. Thus in geography, though she had studied to some length in the ordinary school manuals, she had no idea of the points of compass or of the meaning of many of the simplest terms ; as cities or towns, population, &c. She was deficient in the dexterity requisite for ordinary female occupations.— She was affectionate, generous, and very fond of praise, but not always truthful.

Commencing with exercises to fix the attention, I applied to her instruction the principles adopted in the most approved systems of common school education, modified of course by her peculiar mental organisation.

She remained with me a year, at the end of which time her deportment and manners were very much improved. She read uncommonly well, pieces of a conversational character. In geography, she could answer with great accuracy any questions upon the complete series of outline maps. In mental arithmetic, she understood the principles of the four simple rules ; while in written arithmetic, she could do any examples in addition, subtraction, and multiplication, as also many

in division. She commenced the study of grammar. This was very trying to her at first, but when she left me she could parse any simple sentence; naming the parts of speech and the various particulars required of ordinary children in the same study.

She could write as well as could have been expected with her deformed hand, and during the latter portion of her pupilage with me was in the habit of writing letters home. She was taught to knit and sew, and in this last exercise made great improvement. She had, each day, some household duties allotted to her which were a source of pleasure and profit to herself.

In conclusion, I may add that she was prepared to derive ordinary benefit from a judicious teacher in a common school.

Case No. 4. A boy of 9 years old; small in stature; head slightly irregular in the posterior portion; upper jaw somewhat prominent; transparent skin; so round shouldered as to give the appearance of curvature of the spine; extremities rather short; restlessness of the eye; great general activity, and a want of dexterity in the ordinary occupations and amusements of childhood. He had been subject to convulsions in early life; but though looking rather puny was yet in pretty good health, when brought to me.

While his perceptive faculties were quite well developed and rapid in their operations, he was yet destitute of the little everyday knowledge suited to his years. His intellectual operations were of a limited character, though he often manifested not a little shrewdness in his questions, and no less wit in his replies to questions proposed to him. Nothing of a ludicrous nature escaped his eye. He had no idea of the relations of numbers, or of the distinctions of colors, but a great aptitude for music. He knew his letters and could spell many words mechanically; but was sure to stumble in attempting to read the simplest sentence. His attention, that remained fixed while a single word could be taken in at a glance, faltered and deserted him when two or three consecutive words were its object. He was very excitable, and when excited, cruel in his disposition; affectionate; without reverence; often disobedient; pursuing the wrong even with the distinction between the right and it, clear before his mind; without any proper self-control, and yet at times manifesting a great tenacity of purpose.

I will only remark generally of his habits, that they were particularly troublesome, disagreeable and difficult of eradication.

He had been the subject of mingled hope and fear on the part of his parents. Regarding his intelligence and his affectionateness, there was much that gave promise of development and future well-doing. Regarding his habits and his perverse ness, fear certainly would predominate. Left to the guidance of an unbalanced and partially developed intellect and wayward propensities, he might always be a source of care, vexation and suffering to friends; but with faculties enlarged and disciplined, his passions and habits subservient to an intelligent self-control, he will grow up a good and useful man.

He has now been with me more than two years, and with results that are, I think, satisfactory to his friends and myself. His health has become more confirmed; his physical system invigorated; his eye less restless; his whole countenance more quiet and intelligent; his form more erect; with far more taste for and skill in the sports and exercises suited to his age. His faculties have been developed; he has acquired a power of concentrating his thoughts for a considerable time; his memory has been cultivated; his perceptions are more correct and comprehensive. His conversation certainly indicates as much thought as that of ordinary children of his age. He understands simple relations of numbers; he reads in the 3 or 4 reading books, which have been his study, with uncommon correctness and propriety of expression. He has commenced the study of geography; can pass a very respectable examination upon the globe, or several of the outline maps; fully understanding the terms employed and he is learning to write. He has his little duties and occupations which he faithfully and understandingly performs. In his moral character, there has been a still more marked change; he is affectionate and kind in his intercourse with his companions; rarely excited to an improper degree; generally obedient and tractable; more truthful and often evincing great fortitude and self-control.

His habits have undergone such a favorable change, that one would hardly recognize in the quiet, obedient, and intelligent boy of this present time, his prototype of two years since. In conclusion I may add that I can conceive of no more interesting employment than educating and training such a mind; subduing and refining such a will. If I have any tact, judgment, patience or enthusiasm, in my present occupa-

tion, I owe it in no small degree, to my labors, and the result of my labors in this case.

Case No. 5. A boy five years old; one of a pair of twins, the other of whom was healthy and intelligent from birth, while this one was puny, feeble, subject to fits and deficient in intellect. He was unable to walk until nearly four years of age, and when he came to me could walk but a few rods and that quite feebly. There was a want of power of fixing the eyes upon any object, as well as a general want of control of the nervous over the muscular system. A short time before he was placed under my charge he had been very ill, from which illness he recovered with better health than he had previously enjoyed. His appearance betokened greater deficiency of intellect than that of most of my pupils; still there was an activity of temperament that gave great promise of radical improvement.

He could speak but two or three words and those indistinctly; he could distinguish several letters of the alphabet but without reference to their appropriate names. He was fond of childish amusements, and when amused manifested great glee. He gave evidence of possessing the germ of mechanical talent, but had very little appreciation of musical sounds. He was affectionate, but very irritable, and when irritated or suffering from pain, would scream and kick violently. He spent most of the day in playing upon the floor, or in pleasant weather, in summer, in the dirt out doors.

I commenced at once with exercises in imitation; at first, in the more marked motions of the arms and afterward of the vocal organs. I then led him along step by step through most of the elementary sounds of the language. The difficulty, obviously, in the way of talking, in his case, arose from the discouragement at previous fruitless efforts to control his vocal organs. Under my management, he soon could control his attention and acquired a confidence to attempt anything that I proposed for his imitation. I cultivated his mechanical talent by giving him blocks of wood to play with and strengthened his physical system by suitable gymnastic exercises.

He died in an apopleptic fit, resulting from convulsions, a little more than a year from the date of his admission to my school. I regarded my duty in his case as nearly accomplished and was expecting his parents very shortly to take him home.

He knew all his letters, and could pronounce them with distinctness; could spell or pronounce at sight any words of one syllable, as also many of three letters; could pronounce almost any word of two syllables; and began to form many simple sentences expressing his various wants and emotions. He could also count ten.

His health was apparently much improved, and he walked quite firmly distances considerable for a child. He was as easily managed as any child, and had an unusual flow of spirits; a joy seeking every avenue for manifestation. He was very much attached to the members of my family, and for awhile seemed to have little thought of friends at home; but with the expansion of his intellect his affection for home and relatives revived, and I looked forward with pleasure to restoring him, a new creature, (it almost seemed) to the arms of his friends.

For the week preceding his death, I had several visiters in my school; and his power of attention, his general promptness, his mental activity, the delight he manifested at any addition to his stock of knowledge, and his buoyant spirits left the impression on their minds that he was a child of more than ordinary interest and capacities.

Case No. 6. A boy of 10 years old; head irregularly shaped; squint-eyed; of a very nervous temperament. He had been subject to an apparent disease of the spine. He had very little aptitude either for music or numbers, and was deficient in memory.

He was passionate, and when in a passion, would beat his face and head with a stone. He was the victim of a multitude of disagreeable habits, which had resisted all the efforts of friends at home to break them up. I may add that his peculiarities were increasing and becoming more confirmed under a management and family influence of a superior character.

He has now been with me nine months. Under suitable management, gymnastic exercises and course of instruction, his habits have been improved in a marked degree; his physical system invigorated; he is learning to read, quite rapidly; he can count, and is also learning to write. His conversation betrays a good deal of thought, and he often exercises a commendable self-control. I have no doubt of his ultimately being qualified to transact ordinary business.

CASE No. 7. A boy of five years old; well-formed; with a head of more than ordinary symmetry and beauty; he walked very imperfectly, pushing the right foot always forward. There was a want of proper control of the eye, and his perception of sounds so limited, that he had been regarded as deaf and dumb. There was probably an effusion of fluid upon the brain, producing spasms, to which he had been subject from birth and which occurred always in the night time. His discharges were involuntary. He could not speak; made no particular sound; had no idea of language, nor of obedience to commands, by signs; could not be amused by any playthings, and noticed only books, of which he had his favorites, with reference mainly to the binding; was rarely seen to smile. He was accustomed to wake at two or three o'clock in the morning, requiring from which time the constant services of parents or an attendant. There was a spasmodic motion of the mouth, and not infrequently of one side of his body. He could not masticate his food, having always been accustomed to being fed with soft or liquid food, and this must be placed in the back part of the mouth as he seemed entirely unconscious of its presence in the anterior portion.

I at first felt indisposed to receive him on account of his spasms, which I feared would terminate sooner or later, in confirmed epilepsy; but on more reflection decided to take charge of him. His appearance would enlist the sympathies of any one, and I knew that even in a limited period of time, I could break up his very inconvenient habit of early waking; could make him to some extent subservient to the will of others, and could produce a desirable change in his bodily habits, &c.

He has now been with me 3 months, and though I could not begin any systematic course of instruction, till within a few weeks, owing to an increase in the frequency of his spasms from the irritation of teething, he already has begun to take the first steps in his educational course. He picks up various articles from the floor at my command; he climbs cautiously up some six or eight rounds of a ladder and descends without making a mistep; rolls a ball upon the floor, picks up iron rings and places them upon a stick held in the other hand; and has learned to take only his own books when in the school room. He now lies quietly in bed till daylight; he can hear almost every sound, and masticates his food very much better.

I have been led to describe this case, for the purpose of

exhibiting one of the forms of mental infirmity for which such an institution is designed, as also the first steps in the progress of such a pupil.

I shall close this record of cases with a brief description of a little girl who has lately come under my charge, which is one of no ordinary interest.

Case No. 8. A little girl of five years old. She was bitten by a rabid cat, in July 1847, being at that time one year and nine months old. Previous to that time she was a healthy child, and intellectually forward for one of her age; talking a good deal and very distinctly. Soon after the bite she was taken with diarrhea and vomiting, which lasted six weeks, during which period her voice changed and the sore on her face occasioned by her bite re-opened. On the disappearance of these symptoms she was taken with violent convulsions continuing for 12 hours. Her face was afterward red and distended and her eyes possessed an unnatural glow. For the three following days she had all the terrible symptoms of hydrophobia; tearing the bed-clothes and attempting to bite; unable to bear the sight of water and also to swallow any; together with a frequent recurrence of the spasms. At the end of this period animation was suspended and to all appearance she was dead. At the expiration of half an hour she revived but with returning spasms, which were not however as severe as they had previously been. These continued for more than 24 hours when it was found she had forgotten everything and had lost the power of speech. In a few weeks she gained strength to walk, and then walked incessantly during the day for five months, disregarding everything. She continued to have spasms, occasioned by fear. She remained in this condition for 15 months; ignorant of her parents, of her own name, and utterly incapable of imitating anything. From that period, from a change of medical treatment, she began to improve in her bodily health, sleeping well by night though still very restless by day.

She is now a child of prepossessing appearance, of wonderful activity, sweet disposition, *uninjured* intellect, though without the power of speech. She has a great imitative faculty and tries to talk, but has lost the control of the muscles necessary to articulation. With suitable education of those muscles, I predict for her the power of appropriate utterance.

GENERAL RESULTS.

To this record of the results in a portion of the cases that have come under my charge, I will only add a summary statement of the general results of my labors.

The muscular training to which my pupils have been subjected, has had a manifest effect upon their physical systems. They are more erect; walk better; have more dexterity; greater steadiness of nerves, while at the same time the health has been confirmed. Mental discipline has produced no less satisfactory results, The senses have been educated; the perceptive faculties have been awakened and cultivated; the faculty of imitation developed and increased, and the power of attention has been so augmented in every case, as to secure a capacity for higher intellectual operations.

They have been also equally susceptible to the good influences of moral training. They are less passionate and perverse; more mild and affectionate, more tractable, more truthful and especially more capable of self-control.

But above all, there has been a radical improvement in the habits of the pupils. It is these habits that constitute the disagreeable, troublesome

and perhaps disgusting features of idiocy. Habits of decency, of order, of employment, of quietness, of propriety and decorum, have been substituted for their opposites.

A single visit to my school-room will substantiate this brief statement of general results, and I might appeal to a number of persons who have come, expecting to be pained or even disgusted at the sight of ten or twelve of such children congregated in one room, and who have gone away pleased and delighted by what they have there witnessed. There are regular school-hours and each child has a designated place in the school-room. A portion of the pupils study and recite like the pupils in an ordinary school. Here are several children quietly winding yarn, stringing large beads, piling up blocks, sorting cards with reference to their colors, looking at pictures, or some other simple employment, that keeps from idleness and cultivates industry and patience. Others are drawing various marks upon the black-board or slates, while perhaps a restless one is exhausting his surplus muscular energy by exercises on the ladders or parallel bars. While each pupil has a share of the teacher's time in the special exercises adapted to his mental condition, there are general exercises, calculated to fix the attention, cultivate the faculty of imitation, and educate the vocal organs, that are adapted to the advancement of the whole school.

Management and Education.

This Institution is designed for the management and education of all children, who by reason of mental infirmity are not fit subjects for ordinary school instruction.

And lest this plan should seem too comprehensive, I may mention that they all have in common a want of will, a want of spontaneousness; a want of power of fixing the attention, and a want of development of faculties, to a greater or less degree. "The problem of education" says Seugin, "for all such cases consists not in the substitution of an unaccustomed mode of perception for modes of perception which do not exist; but resides simply in the possibility of regulating the use of the senses, in multiplying the notions, in making fruitful the ideas, the desires, and the passions of creatures who left to themselves would remain without proper relations with the external world."

It aims to nourish and encourage the growth of what may be mere germs of functions and faculties, to direct those functions and aptitudes in the natural channels of physical and mental labor; and to give to the subjects of it the greatest possible resemblance to children well-endowed and properly educated.

But the system does not stop at the mere education of the force, dexterity, and intelligence of the pupil. It seeks by the constant and persevering use of every variety of moral means to render those newly acquired powers and faculties subservient to an enlightened sense of relations to the moral world.

Much will depend upon the patience, tact, and perseverance that is brought to the task of educating such children; as also upon the fullest understanding of the idiosyncrasy of each pupil.

The special means adopted are those that have been so successfully employed in the various European institutions for the same purpose, and they will severally have that prominence required by the peculiarity of each individual subject.

Simple, but appropriate gymnastic exercises to give strength to the muscular system, invigorate the health, and exhaust excessive muscular energy, where it exists. These exercises important in every educational course, are doubly so when physical infirmities are so often to be contended with; when the mind is fettered as it is by its connection with imperfect material organization. These exercises while cultivating the force and dexterity, are also at the same time educating the power of attention.

Exercises in imitation, where the faculty is deficient. This faculty is important in its rela-

tions to correct speech, proper carriage, correct habits and agreeable manners.

Sensorial gymnastics; for the education of the senses; of hearing; of sight, including all the visible properties of bodies, and essential to the formation of correct notions of surrounding objects.

Exercises to cultivate the memory; to store it with facts and ideas for future use.

The inculcation of ideas, of enlarged perceptions of the relations of objects to each other, and finally the discipline of the reasoning faculty to enable it to compare, reflect and judge.

In the advanced stages of the course of instruction, the ordinary school studies and exercises, modified and adapted to the particular mental condition of each pupil, will of course be applicable; especially in their practical relations to life.

It is hoped that this brief and imperfect outline of plans, &c., in connection with the various details afforded in the record of cases previously given, will suffice to give persons interested some idea of the system of instruction pursued, and its adaptedness to the general purposes for which it is designed.

ADVERTISEMENT.

The Institution is located at Barre, Worcester County, Mass.; in one of the most healthy portions of New England, and of easy access from New York and Boston. It is distant 13 miles from West Brookfield, on the Western Railroad; and 21 miles from Worcester, to and from which place there are stages twice a day.

The organization is strictly a family one and no more pupils are admitted than is consistent with such arrangement. The pupils all sit at the same table with the Principal, and are constantly under the supervision of some member of the family, in their hours of recreation, as well as of study. A special attention can therefore be given to their habits and manners, attainable by no other arrangement. The government is mild but firm, and appeal is made at as early a period as possible to the higher motives for good conduct and behavior, on the part of the pupils.

The medical treatment is limited to cases where the physical infirmities are especially prominent: but the observance of proper rules of diet, regimen, exercise, and bathing, is required of all the pupils. It may be remarked in this connection, that there has been but one case of sickness in the school since its establishment.

Proper age for Admission. As this Institution is not designed for custodial purposes, but educational only, the same rules would apply as in the case of ordinary children. Pupils will be received from the ages of six to fourteen; though the first named is the most desirable, for obvious reasons: the individual is more susceptible, more like well-endowed children of the same age; the various organs and muscles are more flexible, and the habits of body and mind less confirmed.

There are no particular portions of the year set apart as vacations, for the reason that it is convenient and desirable that some of the pupils should remain longer from home and home influences than others. Pupils will be received at any time when a vacancy occurs.

Persons making application, will please state particulars of the age, sex, health, general form, habits, condition of the senses, speech, mental condition, disposition, and probable cause of the infirmity of the individual for whom the application is made.

The terms will vary according to the condition of each individual subject, the amount of trouble and care involved in their management and instruction, and can be learned by application to the Principal.

He is kindly permitted to refer to the following gentlemen:

Dr. ANDREW McFARLAND, Superintendent of N. H. Asylum for Insane, Concord, N. H.

FRED. M. BACKUS, M. D., Rochester, N. Y.

HORATIO N. FENN, M. D., " "

Prof. CHAS. D. MEIGS, M. D., Philadelphia.

Rev. SAMUEL A. CLARK, "

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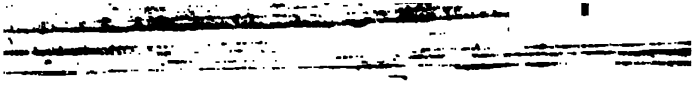

AN EXAMINATION

OF

HUME'S ARGUMENT

ON THE

SUBJECT OF MIRACLES,

BY

A. H. LAWRENCE.

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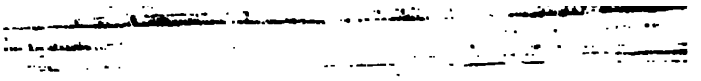


AN EXAMINATION

OF

HUME'S ARGUMENT

ON THE SUBJECT OF MIRACLES.

The celebrated argument of Hume upon the subject of Miracles has long occupied the attention of theologians, and called forth various ingenious and learned arguments in reply; and it may be thought highly presumptuous in an unknown individual to thrust himself into a controversy which has been maintained by Paley, Campbell, Douglass, and others distinguished for intellect and learning; and still more presumptuous to dissent from those writers upon some of the grounds they have taken. Yet, if the positions here assumed shall be found to be correct, they will not lose their interest from the obscurity of their origin; and, on the other hand, if they shall prove to be erroneous, they will do the less injury from not being ushered before the world under the influence of a great name.

Although in all the replies to Hume's essay which we have seen there is much sound philosophy, as well as praiseworthy zeal, yet many of the writers have examined the question from one position only; whilst others, who have set themselves in array against his whole doctrine, have, as we think, misconceived his argument, and consequently have fallen short of the anticipated effects of their own reasoning, from the fact of its being an answer to the *supposed*, rather than to the full and real meaning of Hume.

We shall not refer to what we take to be misconceptions of this sort from any captious spirit, far less from any purpose of injuring, were it possible, the just effects of what is really excellent and sound in the writings referred to; but because we have thought that an unfair answer in the cause

of truth ought not to be sheltered from scrutiny by the advocates of truth, and because we have always felt that Hume had not been fully met in some of his positions, and there was always a secret conviction that what we wished to be true, and believed to be true, had not been fully made out; and a further secret conviction that a good and sufficient answer *could* be given, in the widest scope his argument could take.

With these remarks we shall proceed to state briefly the argument of Hume, and some of the answers which have been made, at the same time pointing out wherein we consider them defective, and then to *examine* the argument, and, as we hope, expose its unsoundness.

It may however be well to premise, that although the laws of nature cannot philosophically be considered as *causes* of action, but only as the established *modes* or *rules* of action, yet in order to give the utmost scope to the language of those who reason respecting those laws as if they were absolute and self-acting *principles*, we may in some cases assume the same language for the sake of argument, without however intending to recognise its correctness.

The following has been well stated to be the substance of Mr. Hume's reasoning:

"A miracle is a violation of the laws of nature. But we "learn from experience that the laws of nature are never "violated. Our only accounts of miracles depend upon tes- "timony, and our belief in testimony itself depends upon "experience. But experience shews that testimony is some- "times true and sometimes false; therefore, we have only "a *variable* experience in favor of testimony. But we have "an *uniform* experience in favor of the uninterrupted course "of nature. Therefore, as on the side of miracles there is "but a variable experience, and on the side of no miracles a "uniform experience, it is clear that the lower degree of evi- "dence must yield to the higher degree, and therefore no "testimony can prove a miracle to be true."

In answer to this, reliance has been placed upon the following arguments, among others. Douglass, in his "Errors concerning Religion," after stating Hume's conclusion to be, that miracles can never be proved, because they are contrary to experience, says; "There is sophistry in the use of the

" word '*contrary*,' inasmuch as a fact stated to have hap-
" pened would not be *contrary* to one's experience, unless
" that person was actually present at the time and place, and
" experienced the *contrary* of what is asserted." "Mira-
" cles, philosophically speaking, are not violations of the
" laws of nature."

Mr. Starkie, in his practical treatise on the law of evidence, holds the following language: "but the question is, whether " mere previous *inexperience* of an event testified is directly " opposed to human testimony, so that the mere inexperi-
" ence as strongly proves the thing is *not*, as previous expe-
" rience of the credibility of human testimony proves that it " *is*. Now a miracle, or violation of the laws of nature, *can* " *mean nothing more than an event* or effect which has " *never been observed before*; and, on the other hand, an " event or effect in nature *never observed before* is a *viola-*
" *tion of the laws of nature*: thus, to take Mr. Hume's own " example, 'it is a miracle that a dead man should come to " life, because that has never been observed in any age or " country;' precisely in the same sense the production of a " new metal from potash, by means of a powerful and newly " discovered agent in nature, and the first observed descent " of meteoric stones, were *violations of the laws of nature;* " they were events which had never before been observed, " and to the production of which the known laws of nature " are inadequate. But none of these events can, with the " least propriety, be said to be *against* or *contrary* to the " laws of nature, in any other sense than that they have nev-
" er been before observed; and that the laws of nature, as " far as they were previously known, were inadequate to " their production. The proposition, then, of Mr. Hume " ought to have been stated thus: Human testimony is foun-
" ded on experience, and therefore is inadequate to prove " that of which there has been no previous experience, &c."

Others have reasoned in this manner, viz: "That Hume's " argument proves too much, as it would be just as strong " against many things which we know to have happened as " it is against miracles. *Any* extraordinary event is impro-
" bable from experience until it has actually been experien-

" ced. Thus it was improbable before hand that such men " as Cæsar and Napoleon should ever live," &c.

Now all this is founded on a misapprehension, either of the reasoning of Mr. Hume, or else of the legitimate consequences of the principles which he assumes. And, first, as to there being an inherent sophism in the use of the word " *contrary* " to experience. We think that an event which has never been observed before may, in some cases, be properly said to be *contrary* to experience even by those who were not present at the time or place at which that event is alleged to have happened. Our experience of the relation of cause and effect is a *positive* experience—an *universal* experience. And whether our belief in the necessity of a cause for the production of every effect be the result of this universal experience of such relation, or whether it be a simple intuition, an instinctive conclusion, it matters not; the *fact* is undeniably true that we feel just as sure that every effect that we witness had its cause, and its *proper* and *adequate* cause too, as that we witness the effect itself. It is a matter of positive and universal experience also, that like causes produce like effects, and the same cause the same effects. If, then, it is asserted in general terms that an effect has taken place without any cause, or by an inadequate cause, or that dissimilar effects have been produced by like causes, or opposite effects by the same cause, we *properly* reply that it is contrary to experience. Or if a particular fact is alleged which militates in any way against the relation of cause and effect, or the relation of any well known principle in nature and its hitherto invariable results, we say properly *that* is contrary to experience; not to our experience *in person* of the contrary of what is asserted, but contrary to universal experience of the results of uniform principles, and of the truth of a fundamental axiom in all philosophy.

It is perfectly true, as Mr. Starkie says, that " our *inex-* " *perience* of an event ought not to weigh against positive " testimony," when that event is a probable one, or even a *possible* one, under the ordinary laws of nature. But we do not think that this doctrine can extend to events which are *not explicable* according to our previous experience of

the laws of nature. But in the latter case our disbelief is not based upon our not having experienced the particular fact at the particular time alleged; we do not discredit it simply because *we* did not *see* it, but our disbelief is grounded upon our *positive* experience of *different* results in similar circumstances under the ordinary laws of nature. If a man tells me that he can extract a metal from potash by some powerful chemical agency, I may well believe him although I may never have seen the thing done, and for this reason, I know that most substances are compounds, I know the power of chemical agents in decomposing these substances, and all this in perfect consistency with the laws of nature. An effect is produced by an *adequate cause*. The thing itself then being possible, nay *highly probable*, I may well believe the simple fact of an individual's *ability to do it* upon his own assertion. But if the same man tells me that by his mere volition he can draw out a metal from potash, I certainly would not, under ordinary circumstances, believe him. And why? Because experience teaches us that no effect takes place without an adequate cause. We intuitively refuse our assent to testimony respecting events which are said to have taken place without the intervention of some cause sufficient to produce them. In extracting a metal from potash there is only a new effect brought to light by a known and competent cause; and although the precise fact had not been within our experience, yet it was not in its nature inconsistent with the *experienced power* of chemical agency. But in the other case there is an event asserted to have taken place *without* an adequate cause, without any physical agency—an effect which is *both* new and *not* the result of any known laws. Such an event is contrary to our experience of the laws of cause and effect in the general, and of the power of human volition in particular.

Again, as to the argument that "Hume's reasoning proves "too much, inasmuch as it is just as strong against many "things which we know to have happened, as it is against "miracles; that a thing (according to Hume,) is improbable "until it has actually *been experienced;* thus it was impro-"bable beforehand that such men as Cæsar, Napoleon, &c., "ever should live."

Now this argument seems to suppose Mr. Hume to mean nothing more than that there may be *chances* against the *happening* of an event, which event *in itself* would be nothing marvellous if it were to happen. This we conceive to be neither a fair understanding of Mr. Hume's meaning, nor a proper, philosophical, distinction between different states of improbability, or rather the different *sources* from which improbability may arise. An event may be improbable *in itself*, or it may be improbable from some circumstances which may control it. It is improbable that yonder blind, lame, and penniless beggar will visit Europe this season, and it is improbable that he will walk across the neighboring river on the surface of the water. Yet no one will contend that the improbability in these cases is of the same character. Blind, lame, penniless though he be, and without the least ray of expectation of visiting Europe, it is nevertheless *possible* that he may do it. It is improbable, but not from any thing marvellous in the thing itself, but because in his case circumstances (if I may so speak) have *heaped up* in his way *chances* against it. But to walk over the river on the surface of the water, the known laws of nature have shown to be improbable, because UNDER THEIR ORDINARY *operation* it is *impossible*.

Enough we think has been said to show that what Mr. Hume really meant by "being contrary to experience" was, not that the very identical fact had never been before *experienced*, and therefore could never be believed, but that such fact was inconsistent with the known operation of *principles* which had been deduced from a long course of observation and experience. We have been thus careful in giving what we believe to be his true meaning, because we wish to approach the subject with perfect fairness, and because we believe that an argument founded upon a false or uncandid statement of his reasoning not only fails to convince us of its fallacy, but reacts on the cause it was intended to support, and in the end does much harm. And besides, we believe that his argument may be successfully combatted, at least to the minds of all who believe in the existence of a "Great First Cause."

In the discussion of this question we do not hold ourselves obliged to yield to all the postulates of atheism, nor to admit the doubts of those who deny those maxims on which we instinctively act, because they cannot be proved by absolute demonstration. We intend our remarks for those, who believe in a Great First Cause, but who reject both Christianity and the miracles, which were the accrediting evidences of it. We shall assume the existence of a God for the following reasons:

1st. Because upon the principles of absolute atheism or skepticism, although neither miracles nor any thing else could be certainly proved, yet neither could their *impossibility* or improbability. Nothing could be proved either to exist or not to exist, *without assuming* IN the reasoning, some of those very maxims which the object of the reasoning is to disprove.

2nd. Because Mr. Hume himself says, that "though the "Being to whom the miracle in this case" (any new system of religion) "is ascribed, be almighty, it does not upon "this account become a whit more probable; since it is im- "possible for us to know the attributes of such a Being, "otherwise than from the experience which we have of his "productions in the usual course of nature."

3d. Because the greatest number of those who have sheltered themselves under the reasoning of Hume, have not been Atheists but Theists, and have made his arguments their boast and reliance, in rejecting Christianity, and fortifying modern infidelity.

Hume does not deny the *possibility* of miracles. His argument is not a metaphysical one, founded on the nature or essence of the thing considered, but is entirely a practical one, touching only the reasonableness of our *belief* in miracles. He no where attempts to prove that miracles *cannot* be, but that upon principles of reason we cannot *believe* them to be. Nor would it comport with his philosophical opinions to assert that miraculous events, or *any* events, *could not* occur, inasmuch, as he referred all our knowledge to experience; consequently, he could only *infer* from the past what would *probably*, not what would *certainly*, take

place in the future. The most that Mr. Hume could say, respecting the possibility of miracles, would be, that as they never *had* happened, so they never could reasonably be expected to happen.

It is the want of a proper observance of this distinction between that which may reasonably be expected to be, and that which *must of necessity be*, which has led to considerable irrelevant reasoning in answer to a misconceived notion of Mr. Hume's meaning. His argument (as we have said,) we understand to be entirely a practical one, touching only the reasonableness of our *belief* in miracles. It does not consist of, nor is it dependent on, the peculiar philosophical notions of its author, as developed in other works. If it did, we should have but little fear of it in its practical effects; for however plausible and ingenious as *speculations*, the ideal theories of Berkley and Hume, and the destruction of all connection between cause and effect, so strenuously maintained by the latter, when applied to our every day affairs, and our temporal or eternal interests, they can have but little influence. We do not much fear the theories of those who, to sustain themselves, must deprive us of those instinctive impressions, and those spontaneous operations of the mind, and those self-evident axioms, which are the foundation not only of all reasoning, but of all action.

But the great error in most of the reasoning in relation to miracles—both in that of Hume and of those who have replied to him—is, in overlooking the true nature of miracles, and attempting to reason on them in the same manner as on ordinary circumstances. They have been treated as facts which must have taken place through the agency of, or in accordance with, the laws of nature; or, in other words, the arguments seem to suppose NATURE to be the cause of their happening. And it is this *erroneous* view of miracles that Mr. Hume's reasoning overthrows, and none other. But it should be remembered, that miracles are *opposed* to the ordinary laws of nature, because if they were explicable upon any known laws, they would cease to be miracles. And to speak of the raising of the dead, the turning of water into wine, &c., as of the same kind of improbabilities as

the exploits of Cæsar or Napoleon, is certainly a loose mode of reasoning.

But, as we have said, Mr. Hume argues that a miracle cannot be proved, because it is against those laws which experience has shewn to be immutable—which means, that an event cannot be proved to have happened *by* the operations of nature, which is against all our *experience* of the operations of nature. Or, in other words, he does not take into view *any other agent* (as causing an event,) than nature, or any other "*modus operandi*" than the ordinary *course* of nature. But if we suppose an *independent* and *higher* power brought into exercise, which can even *set aside* the laws of nature, then all such reasoning falls to the ground, because we cannot circumscribe within any laws either the *acts*, or the *manner* of acting, of a being who is superior to, and independent of, *all laws*. For instance, if we were told that a rock had separated itself from the earth, and *by* the *force of gravitation* had raised itself in the air, we should disbelieve it, because it is against our uniform experience of the effects of gravitation, which draws heavy bodies to the earth. But if we had been told that the rock had been *hurled* into the air, by some extraordinary force, which for the time had counteracted the power of gravitation, we might readily believe it. And in this latter case we should not think of reasoning about the uniformity of the law of gravitation, and our want of any experience of a violation of the order of nature, &c., but we should at once perceive that a *force* had acted independently of the law, and had done something which the law itself would never have done. Just so with miracles. When we are told by Mr. Hume that we ought not to believe them because they are contrary to the laws of nature—we are told truly, *if it is meant that they are caused simply by the operations of nature*—but we are not told truly, if they are considered as the *acts of a power superior* to the laws of nature, and entirely independent of them.

In this view of the case, let us examine a little more particularly the argument of Mr. Hume. He says, a miracle is a violation of the laws of nature. But we learn

from experience that the laws of nature *are never* violated, &c. Upon the truth of this proposition the whole of his argument depends, and the conclusion derived from it depends entirely on the truth of each part of the proposition. He asserts experience to prove that the laws of nature are never violated, and that experience proves human testimony to be often fallacious; so that we have an *uniform* experience opposed to a *variable* experience, and of course the latter should always give way to the former. The truth of this argument then, and the soundness of its conclusion, depend upon the *fact* that the laws of nature are never violated. If this proposition be not true, the conclusion is good for nothing. We assert then without fear of contradiction, and as a fact established by experience, that the laws of nature are often violated; nay more, that they are daily and hourly violated *in the same manner*, though not to the same extent, as they are violated in the case of miracles. When a stone is thrown into the air, the law of gravitation is violated. When a bird takes wing, the law of gravitation is violated. When two bodies in certain states of electricity, are brought near each other, they mutually repel, and the law of attraction is violated. And so in thousands of instances. Nor will it suffice to say, that these are not violations of the laws of nature because they are of frequent occurrence, and may be explained in a natural way; that the law does not *cease*, but is only *overcome for a time*. The law is violated for the time as much as a law can be violated. A different effect is produced, from what the law would produce. And it matters not whether the law is overcome by another law, or by an extraneous force, the result is the same, and the law is violated. The "*vis inertiæ*" may be called a law of matter; that is, it is a law of matter that it shall remain at rest unless put in motion by some superior force. A superior force may overcome that law. Now we would ask, wherein does this differ in principle from raising the dead. It is a law of our nature that when we are dead we remain at rest, have no power of motion, nothing of sensation, or of life. Yet *may* not this law be overcome by sovereign power, in the same way that the "*vis inertiæ*" of matter is overcome by human force?

If the question were, whether the dead were ever raised into life by the *ordinary operations of the laws of nature*, uniform experience of the operation of those laws would lead us to a denial of the fact. But such an inference is not contended for. What we contend for is this, that it is unphilosophical and wrong to adduce the acknowledged uniformity of the operations of nature, *when uncontrolled*, in opposition to positive testimony in favor of different results where nature is *not* uncontrolled. We *know* that effects are every day produced, different from what would have been produced, by the *uninterrupted* course of nature.

Let it always be kept in mind that we are not attempting to show that the laws of nature ever violate themselves, or that a law of nature in its free operation ever produces any effect contrary in its character to those effects which are the ordinary consequences of that law. When a heavy body is thrown into the air the law of gravitation is violated, but not by the law itself, but by an independent force. And all we contend for is, that the laws of nature are often opposed, overcome, and in this sense "*violated*" by some extraneous power, and in the same sense in which they are violated in the case of miracles, and that, therefore, Mr. Hume's assertion is not true, and of course the proposition founded on it false. We do not pretend that the *laws of nature* produce miracles, but that an Almighty power suspends, overcomes those laws, and introduces other effects which are in no other sense miracles, than that they are not caused by the ordinary active powers of nature, but by an *extraordinary* and *unusual* exertion of omnipotent power. Nor let it be said that in this reasoning we are giving an improper meaning to the word "violated." We defy the most zealous advocate of Hume's infallibility, to point out any difference (except in the degree of power required, and the time of its continuance,) between a violation of a law by that power, which produces a miracle in the sense of Mr. Hume, and that power which causes a stone to ascend. What we call a miracle is no more in the hands of the Almighty, than the smallest exertion of power in the hands of man. There is no difference in principle between the act of the Almighty

in exerting omnipotent power, and suspending or overcoming the laws of nature—and the act of a human being in overcoming them for a time by an exertion of limited power—save that the former exerts his control over laws which he himself has ordained, whilst the other opposes his feeble arm against laws which he can not long resist. The one can act upon the law itself, and suspend both the law and its effects—the other can only for a moment suspend its effects.

There is another of Mr. Hume's propositions essential to the establishment of his doctrine, which we also think incorrect, viz: "That our belief in human testimony de-"pends upon experience." This doctrine has been most successfully assailed by Mr. Campbell in his celebrated reply to Hume upon the supposition that Hume's meaning is, that our belief *originates* in experience. Mr. Campbell has very clearly shown, that experience leads us to a distrust, rather than to a belief of human testimony; but in our opinion Mr. Campbell's doctrine does not avert the ultimate conclusion of Mr. Hume, (his proposition standing as it does in general terms,) inasmuch as it makes no difference as to the result, whether our *belief* or our *distrust* of testimony is founded in experience, since our experience is in either case *against* the infallibility of human testimony. Mr. Hume has certainly shown great dexterity in the management of his argument. But though standing as it does in abstract terms, Mr. Campbell's reasoning (which is undoubtedly correct,) may not reach it with much effect in this particular point; still we think that he has put us on the right track for a proper understanding of the subject. Mr. Hume treats the "laws of nature" as a whole, and in this case very properly, because his proposition is as true of each and every, as of any or all the laws of nature. He also treats human testimony as a whole, in the aggregate, without reference to its parts or qualifications. He says, "our experience is *against* the infallibility of testimony," meaning testimony as a whole. Now we say that experience is not against *all* testimony, because our experience is in favor of much, perhaps *most* testimony. All that can be said is, that human

testimony is not always found to be true. Hume would have the exceptionable vitiate the unexceptionable. Taking the character of all testimony from the character of one class or species, and stamping testimony as a whole as therefore doubtful, he concludes that all the testimony in the world would not be sufficient to establish the truth of a miracle. Now we would observe, that testimony derives its character mainly from the character of the individuals from whom it comes, and the circumstances under which it is given. Our experience is in favor of the testimony of some men and against that of others. There are some men whom we have never known to tell a lie, and others whom we have scarcely ever known to speak the truth. We almost instinctively trust the one and distrust the other. But to bring into one mass all human testimony and brand it as unreliable, because a part is uniformly bad, and only a part uniformly good, is very much like saying that this world is in physical darkness because it is not uniformly clothed in light.

Our senses sometimes deceive us; and the reasoning of Mr. Hume is just as strong, therefore, against the evidence of our senses as against human testimony, both taken as a whole; yet, there are some circumstances in which the evidence of our senses must be considered as ***absolutely certain.***

But it may be said, admit the truth of all this, admit that experience is in favor of some testimony and against other, still *may* not those who have never yet deceived us *possibly* deceive us hereafter? Is there an absolute *certainty* that those who have never yet deceived us, never will deceive us? If a man of unimpeached veracity should tell you that he had lately seen a brook, which had from time immemorial run down a hill, without any known or perceptible cause run *up* the hill, would you be as certain from that man's testimony that the brook *did* flow up the hill, as you would be from your experience of the laws of gravitation that it did not flow up the hill? These questions we think present the doctrine in their fairest and strongest light, and we wish to answer them fairly, and at the same time to make known the ground on which we stand. We answer, then, that a man who has never yet deceived us, *may* never-

theless deceive us. The laws of human conduct are not as open to the view as the laws of physical nature; and in the case of the brook just mentioned, if required to believe the statement without any other circumstance than the bare word of the informant, we should hardly feel convinced of the fact. But our doubts in such case arise from what we suppose the *possibility* of variance in the one case, and the impossibility of variance in the other. Testimony depends entirely upon the will or choice of the witness, which circumstances may vary. But the laws of nature can only be changed by the will of Him who ordained them, "in whom there is no variableness neither shadow of turning." The presumptions are strongly against any deviation from the ordinary operations of the laws of nature. *Experience* would lead us to *expect* the same results that had hitherto been witnessed to continue, but it could properly go no further. No one would be so bold as to say that the Almighty *could* not for a time change the laws of his own establishing, or that he *might* not by possibility see sufficient occasion for so doing. Experience, in this view of the case, is not a proper guide to the truth, for it only makes known what may be fairly *anticipated*, but not what *must* of necessity actually happen. But of this hereafter: we wish at present only to say, that evidence itself (as shewn by Mr. Starkie) admits of various degrees; it is strengthened by concurrence of testimony; it is still further strengthened by concurrence of circumstances; and it is possible that there should be such a concurrence of testimony and circumstances as to render the falsity of the evidence as improbable, nay, as *impossible*, as the facts which it asserts. Nay further, there may be circumstances in which the violation of a law of nature shall be a more probable event (even judging by *experience* in its proper sense) than that the evidence and the circumstances brought to support it, should be untrue. For example, if on the 8th March I started for New York to take passage for Europe, and just before leaving W., a man whom I had never known to deviate from the truth, told me that at 12 o'clock in the night previous, in the midst of total darkness, the sun appeared in meridian brightness at the zenith for one hour, and had then suddenly disappeared, I

should probably think that he had seen a meteor, or had been dreaming, or that he wished to frighten me, or that he was telling a lie; but I should hardly believe that the sun had been seen by him at the time and in the manner described. If the man seemed terrified, I should suppose that at least *he* believed what he was telling, but I should still attribute it to delusion. But if I heard others talking of the same event, and saying that they had seen it, I could not doubt that some remarkable luminary had thus appeared, but could not believe it to be the sun. If on arriving at New York, the same thing were talked of and believed, all agreeing that it was the sun, that the light and heat were those of the sun, I should be still more staggered. I set sail immediately for Europe, and ours is the first vessel that arrives after the 8th March from the United States. On our arrival, the first topic of inquiry is, whether the sun was seen at midnight on the American side of the Atlantic. Persons assert on all hands that at the precise hour it was seen in Europe. On looking at the newspapers of the 9th, I find full accounts of the phenomenon, and all agreeing that the object seen was the sun. Now I ask, *could* I doubt this concurrence of evidence? If so, on what principle could I doubt it? Mr. Hume tells us that it is against our experience of the uniformity of the laws of nature. But is it not equally against our experience to find *such* evidence as this false? But Mr. Hume would say, though the witnesses may not be false, it is still probable that they were deceived. To this we reply, that they could not be deceived as to the reality of some remarkable phenomenon, but only as to the fact of its being actually the sun. Well now suppose, further, the evidences of the truth of the New Testament to be just as they now are, and suppose there were contained therein certain prophecies that the Messiah should again appear on earth about this time; that there should be certain signs and wonders in the Heavens and on the earth, just preceding his appearance, among which prophecies should be contained one, that the sun should appear at midnight and shine with its usual splendor, and that other of the predicted signs and wonders had absolutely taken place, would not this place the

evidence that we have before spoken of in a state of absolute unassailability?

Again, suppose that the inventor of the Magnetic Telegraph had concealed within his own bosom its principles and effects, but had at the same time constructed his fixtures from Quebec to New Orleans. Suppose that he had then announced to the world (without however making known any thing of the manner in which it was to be done,) that *in the space of two minutes* he would communicate a message from Quebec to New Orleans, and also the answer to it. Suppose, too, that he proposed to communicate what any friend in one of those places was doing, his looks, his dress, his actions, his conversation, &c., provided that friend would visit a particular room. Suppose the thing to be tried over and over again, by different persons, and at different times, and that the evidence of thousands could be brought to establish the fact. How would Mr. Hume act in regard to such testimony? He would be bound on his own principles to reject it. The *facts* would be as clearly against our experience as the fact of the child's restoration to health by our Saviour, even before he had reached the dwelling. According to Mr. Hume, here would be an event asserted, which militates against all our ideas and experience of time and space. We hear that said to have been accomplished *in a moment*, which reason and experience tell us *must* have required weeks to accomplish. We are told of a conversation being carried on at the distance of some 2,000 miles with nearly as much facility and rapidity as it could be if the parties were face to face. To Hume this would be really as miraculous an event as could be conceived, and against our belief of which all his arguments would apply with just as much force as against the miracles recorded in the Scriptures. True, when the theory is unfolded, it is explicable on natural principles—that is, the effect is produced by the operation of a well known agent. But so is it in the case of miracles. Superior force is a well known agent, though sometimes (like the galvanic fluid in the case just cited) it produces unwonted and astonishing effects. *So far as our belief* is concerned, the two cases stand upon the same ground. Besides, even now, not one person in a thou-

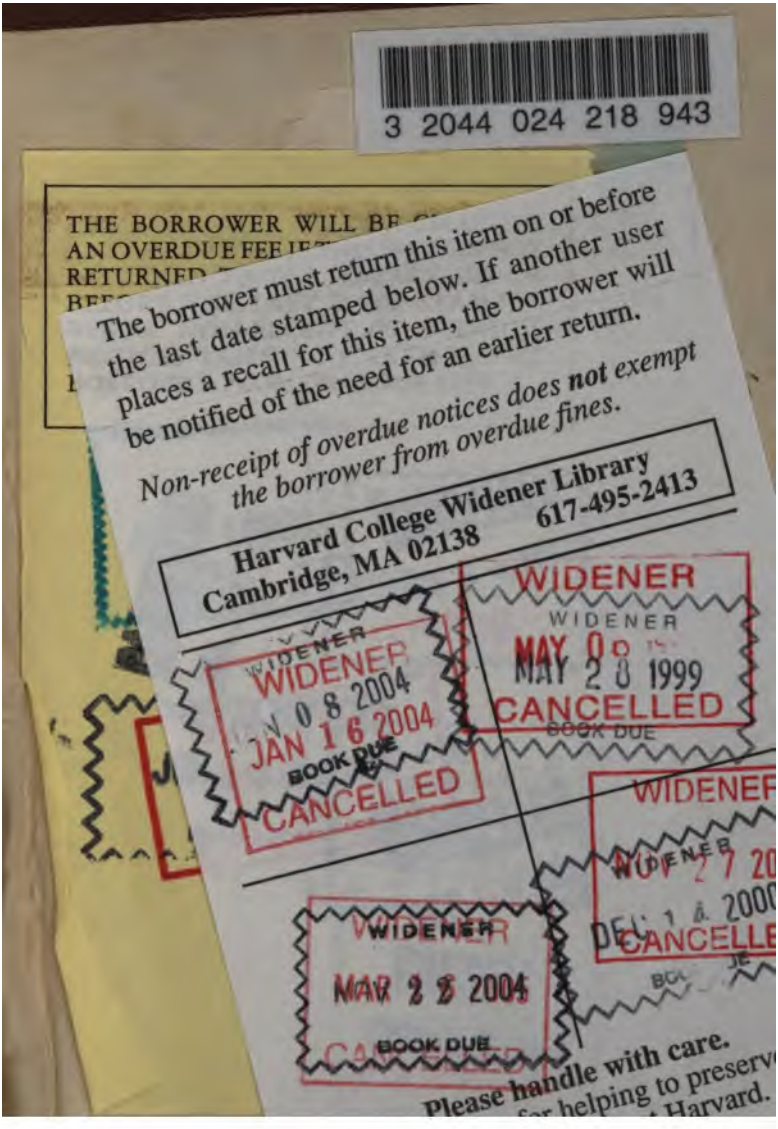
sand understands the rationale of the thing, or has ever actually *seen* the experiment made. It is taken entirely on trust. But at any rate, *before* the principle was unfolded, and whilst it appeared a supernatural affair, on Mr. Hume's principles we were bound to disbelieve it, and yet it was nevertheless a fact susceptible of absolute certainty.

We believe, then, that those extraordinary acts called miracles are, *in themselves*, when considered with reference to the established laws of nature, in the highest degree improbable, though upon the supposition of an independent and superior power, perfectly *possible*. We say *in themselves* improbable, because we could in no way suppose a miracle possible without the intervention of such controlling force. They contain within themselves no explication of their causes, in unison with the uninterrupted operations of nature, but are referrible only to arbitrary, absolute, and unaccustomed power.

If then we were once to suppose an Almighty Sovereign and moral Governor of the universe, whose character and attributes were somewhat shadowed forth in the works of nature, but who was about to give a revelation for the proper conduct and final salvation of men, it would then become probable, or at least not incredible, that he would give evidence of the genuineness of this revelation, and of the source whence it emanated, by the performance of acts which, should *in themselves* be extraordinary and improbable. That he would approve the revelation as coming from the omnipotent God, by the exhibition of omnipotent acts; because, in the same proportion as the acts were improbable or supernatural, so would the probability be of their divine origin; and in the same proportion as their *improbability* should be diminished, would the *probability* of their being in the usual course of things be increased. Circumstances then may render it probable that the Almighty would arbitrarily perform acts, which in themselves would not only not be probable, but violently improbable under the known course of nature. Whenever an *occasion* for miraculous power shall be seen, then we may reasonably expect a manifestation of that power; and we see no reason why the expectation thus raised, may not counterpoise the expectation induced by ex-

perience, that the manifestations in the natural world shall be as they have hitherto been. It is but an *inference*, not a certainty, in either case. Thus, that water should by the force of gravitation rise above the level of its fountain, is in itself an event as improbable as well could be. And yet, if the Almighty were to send an accredited messenger from Heaven, it is very probable that he would enable him to perform acts as unusual and unaccountable as that of raising water above its level by a word, for such acts would be the vouchers of his mission. Under such circumstances, miracles would be the *very best*, if not the *only* satisfactory evidence; and inasmuch as from their natural improbability (judging by the ordinary course of events,) they would be the best evidence of *supernatural* power, so they would be the most *probable* means that we can conceive of by which a divine revelation would be accompanied. The question would then become entirely a question of *fact*. The probability arising out of the occasion, the circumstances, *the demand* for them, would neutralize the improbability growing out of the nature of the miracles themselves; and as to their susceptibility of proof they would be on the same footing with other remarkable facts.

We have thus endeavored to set forth the true and legitimate meaning and effect of Mr. Hume's argument, by pointing out some of the particulars in which he may have been misunderstood—to show that his argument in its utmost force can apply only to those events which are, or are alleged to be, *natural* or from natural causes—to show that our experience of the course of nature *under prescribed laws* cannot reasonably be set against the acts or manifestations of a Being who is superior to all laws—to show that the inference of Mr. Hume is not legitimate, because one of the essential propositions on which it stands is not true, viz: that the laws of nature are never violated—and lastly, to show that there may exist even a *probability* that a Being who is independent of all laws should act in direct *opposition* to the laws of nature, whenever he should wish to manifest *himself* to mankind, or to accredit any created being as a *messenger* from himself.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